The role of the Covenant of Mayors in local level climate governance

A comparative case study between the province of Barcelona and the region of Zealand

Jonathan Lambregs

The role of the Covenant of Mayors in local level climate governance

A comparative case study between the province of Barcelona and the region of Zealand

Jonathan Lambregs
Reg. N: 880111497070
4 March 2013

MSc Thesis Environmental Policy Group, Wageningen University
Supervisor: Prof. Dr. Ir. Arthur P.J. Mol

Abstract

The Covenant of Mayors has been launched in 2008 and aims at mobilizing local and regional authorities in Europe around the fulfilment of EU objectives. The initiative is part of the Climate- and Energy Package by which the European Commission has set forth its targets for 2020; a 20% reduction in greenhouse gases, a 20% improvement of energy efficiency and a share of 20% of the EU energy production from renewable energy resources. The Covenant aims at the local level to contribute to these goals by enhancing horizontal cooperation amongst the signatories and vertical interaction between the local and supranational levels of authority. This study finds out whether the facilities offered by the Covenant have a positive effect on local level climate governance and result in the instalment of sustainable energy systems. Therefore a comparative case study between two very distinct regions in Europe; the province of Barcelona and the region of Zealand has been conducted. The analysis leads to the observation that horizontal cooperation is enhanced in both regions due to the Covenant, especially between experienced municipalities. They further improve their policy approach by cooperating with neighbouring authorities. Inexperienced municipalities increasingly understand the urgency to tackle the problem of Climate Change and the economic benefits of investing in a sustainable energy system. Furthermore, the Covenant succeeds in installing a firm policy basis for the launch of promising energy projects and vertical interaction is stimulated, although not between the municipalities and the European policy makers as expected, rather between the regional authority and the supranational level.

Table of Content

Table of figures

Table of tables

List of abbreviations

AR4: 4th Assessment Report
BEA: Barelona Energy Agency
C40: Cities Climate Leadership Group
CAP: Climate Action Plan
CCP Cities for Climate Protection
CCS: Carbon Capture and Storage
CEMR: Council for European Municipalities and Regions
CoMO: Covenant of Mayors Office
COP: Conference of the Parties
COREPER: Permanent Representatives Committee
EBI: Emission Baseline Inventory
EC: European Commission
EIB: European Investment Bank
ELENA: European Local ENergy Assistance
ETS: Emission Trading System
EU: European Union
GHG: Greenhouse Gases
ICLEI: International Council for Local Environmental Initiatives
ICREA: Institució Catalana de Recerca i Estudis Arançats
IPCC: Intergouvernmental Panel on Climate Change
MEP: Member of European Parliament
RD 1/2012: Real Decreto
SEAP: Sustainable Energy Action Plan
TMN: Transnational Municipal Network
UN: United Nations
UNCED: United Nations Conference on Environment and Development
UNFCCC: United Nations Framework Convention on Climate Change

Acknowledgement

Introduction

The importance of local and city-level policy in the search for a comprehensive global answer to the threat of climate change has been widely acknowledged. Of the total anthropogenic greenhouse gas (GHG) emissions, cities account for 70%. In particular, 80% of the energy used and consequently of the Greenhouse Gasses (GHGs) emitted in Europe occurs in urban areas (Covenant of Mayors, 2009). Although cities with their key economic activities and constant growth of inhabitants are a key contributor to growing GHG levels in the atmosphere, they are also the centre of innovation with the presence of advanced clean energy systems, sustainable transportation and waste management. With the latest climate change science accessible in a closeby academic institute, city governments can more easily cooperate with scientists and other experts. Taken into consideration that currently over the half of the world's, and 75% of European population lives in urban areas (Covenant of Mayors, 2009; UN, 2011), cost-effective policy responses can especially be developed at city-level (Rosenzweig *et al.*, 2011). Because of their proximity to the people and their ability to enhance social acceptance for measures amongst the broad public, implementation of these policy responses is facilitated. Hence, municipal authorities can respond more adequate and swiftly to the local impacts of a changing climate (OECD, 2009), which they are – because of their vulnerability - increasingly exposed to (Kern, 2010).

This belief has been central to the Brundtland Report of 1987 and the resulting Rio Conference of 1992 with the development of Local Agenda 21. As a result, local authorities around the globe ranging from mega-cities to small municipalities have implemented noteworthy measures in tackling global climate change (Alber & Kern, 2008; Corfee-Morlot *et al.*, 2009). Accordingly, the issue has been reframed from a global problem requiring global solutions to a local problem. This shift has given the search for a solution to climate change an urban and local character and has challenged the policy communities and scholars to reconsider the understanding of governing global environmental problems (Betsill & Bulkeley, 2007; Biermann & Pattberg, 2008; Okereke *et al.*, 2009; Bulkeley & Newell, 2010). Since cities, towns and municipalities launched a concise climate change policy framework, numerous authorities started to cooperate with each other by means of different kinds of networks (Kern, 2010).

The trend of city-networks focussing on global environmental problems has been set in the 1980's with the launch of ICLEI. "Local governments for sustainability" has been the first network explicitly aiming at providing an answer to environmental issues. During the Earth Summit in Rio, ICLEI launched its climate change programme – Cities for Climate Protection (CCP) (Chiu, 2010). A relatively new type of network has been set up in 2008 under the 'Climate and Renewable Energy

Package' of the European Commission (European Commission, 2008). In order to enhance and facilitate the implementation of the directives under this package and to motivate local level authorities to take ambitious measures, the Covenant of Mayors has been launched in 2008 (Covenant of Mayors, 2011). Apart from its top-down creation, this policy instrument demonstrates numerous important similarities with Transnational Municipal Networks (TMN). Aware of the several networks European cities are involved in, one would question the added value of this initiative of European environmental governance. The aim of this dissertation is therefore to assess the importance of the Covenant of Mayors in European climate change governance by conducting a comparative case study between two regions in Europe; the province of Barcelona and the region of Zealand.

Chapter 1. Research set-up

In this first chapter the research set-up is explained. It describes the reasoning behind this study and which questions it tries to resolve. At first the contextual environmental problem is described. The growing importance of local climate governance has led to cooperation amongst local authorities and the launch of different transnational municipal networks (1.1.). Next, the Covenant of Mayors – a network launched by the European Commission in 2008 – intends to empower local initiatives and projects in municipalities across Europe. It does so by facilitating vertical and horizontal cooperation (1.2.). The objective of this research is to find out whether the local authorities have been able to benefit the facilities offered by the Covenant (1.3, 1.4.). To do so, a comparative case study is conducted. A penultimate section informs about which research methods are applied and which cases are selected in order to gather the necessary empirical data (1.5.). Finally, the chapter is closed with a verbal "road map" guiding the reader to what lies ahead (1.6.).

1.1.   Problem definition

Although the following statement is subject to very distinct opinions, the European Union (EU) has committed itself to function as an example in the global negotiations on climate change. It has made combatting climate change one of its top priorities (Schreurs & Tiberghien, 2007). Inside its own borders, the EU has set ambitious targets in order to curb GHG emissions. An emission cut of at least 20% by 2020 below 1990 levels, have been set out in the EU 'Climate and Renewable Energy Package' (European Commission, 2012).

This package contains four directives: Directive 2003/87/EC establishing the EU Emission Trading Scheme (EU-ETS), Decision No. 406/2009/EC on an 'Effort Sharing Decision' governing emissions not covered by the EU ETS, Directive 2009/28/EC on binding national targets for renewable energy use, and Directive 2009/31/EC on a legal framework to promote the development and safe use of carbon capture and storage (CCS). In order to achieve these goals, the EU has to make sure that its policies are accepted, endorsed and implemented at all different policy levels throughout its Member States. The local level plays a crucial role because of its proximity to the public and local communities. Furthermore 80% of energy consumption and CO_2 emissions is associated with urban activity (Covenant of Mayors, 2011). Empowering cities, towns and villages to implement locally designed policies that fit in a broader national and European policy framework enhances social acceptance. European citizens that understand the changes at hand and feel involved in the policy making process will be more likely to endorse new regulations and measures. Social acceptance is therefore

of key-importance in the implementation of top-down developed policies. This is especially the case in the area of energy policy where the broad local population is affected by measures taken (Wolsink, 2007; Breukers, 2007).

The Covenant of Mayors is a top-down initiative that fits neatly to this philosophy. The initiative has been launched to empower local governments in their efforts to implement sustainable energy policies. Noteworthy is that the movement solely incorporates public (local and regional) actors in order to fulfil EU objectives. Non-state actors are therefore left out. It allows cities and municipalities across Europe to connect amongst each other on a voluntary basis similar to a TMN. However, different from TMNs, the Covenant has not been launched by a network of cities and municipalities across Europe, i.e. by horizontal cooperation, but by the top down, i.e. by the European Commission. Hence, it is a governance model combining vertical and horizontal linkages (Kern *et al.*, 2012).

It is this duality that makes the Covenant "an exceptional model of multi-level governance" (Covenant of Mayors, 2011). It is regarded "the only movement of its kind mobilising local and regional actors around the fulfilment of EU objectives" (Covenant of Mayors, 2011). On the one hand the initiative provides facilities inherent to horizontal cooperation, such as information sharing and the exchange of best practice examples, political support, norm diffusion and opening up new possibilities for political and financial resources. The facilitation of horizontal cooperation initiated by public institutions has not been seen before. Certainly not of this magnitude. On the other hand, the Covenant has been developed top-down by the European Commission in order to mobilize and motivate local actors to help the EU built on their sustainable energy strategy. By setting up communication channels the European Commission aims at enhancing the role of cities and municipalities in EU decision making. By doing so, the European institutions hope to learn from local experiences and knowledge. Therefore cooperation and communication between the local- and supranational level is facilitated. This is considered the vertical dimension of the governance model.

One could possibly conclude that a combination of the two dimensions (horizontal cooperation and vertical interaction) sounds quality enhancing. Vertical interaction is proven to enhance social acceptance and TMNs have shown that horizontal cooperation improves the quality of local policies. Nonetheless, the actual impact of the CoM on the process of local level climate change policy formation remains unclear. Since the Covenant has only recently been launched - January 2008 - little to no research has been conducted regarding this initiative. It is therefore interesting to know whether this governance model can be effective and does meet its key goals. Before the Research Objectives are explained, the main purpose of the Covenant is clarified in order to fully grasp the research set-up.

1.2.   The objectives of the Covenant of Mayors

In order to make an analysis of this relatively new form of governance, the initial goals of this mechanism should be made clear. The movement aims at "mobilising local and regional actors around the fulfilment of EU objectives" (Covenant of Mayors, 2011). In other words, the Covenant is set up to facilitate the implementation process of the directives set-out in the 'Climate and Energy Package'. This in its turn is part of an overarching European sustainable energy strategy. If the EU is committed to achieve its 20% reduction goals in time, local stakeholders, citizens and their groupings are required to share a similar aim. The initiative has been launched to empower local governments in their efforts to implement sustainable energy policies. Therefore, only public (local and regional) authorities are incorporated in the network. Non-state actors are left out. Since the Covenant groups local authorities, an important aspect is the proximity of these local authorities to the broad citizenry. By directing more competences to the local level and providing financial and technical assistance to these authorities, the EC aims at advancing the role of front running municipalities and their ability to initiate adequate energy policies. As the website states: "to endorse and support the efforts deployed by local authorities in the implementation of sustainable energy policies" (Covenant of Mayors, 2011).

In general the signing municipalities want to "meet and exceed the European Union's 20% CO_2 reduction objective by 2020" (Covenant of Mayors, 2011). The Covenants' objectives are manifold. The overall intention is to increase the energy efficiency of local and regional authorities. With its ambitious goals, the Covenant is not a unique network. Many networks have currently set goals that outrun the GHG reduction targets agreed upon in international debates (Bulkeley, 2010). The Covenant has been created as part of the 'European Union Action Plan for Energy Efficiency: Realising the Potential'. It is regarded – both by the European Commission and a diversity of related organisations involved in the consultation round on the EC's action plan for energy efficiency – as a successful policy instrument to bring energy efficiency policy to the local level and to "think globally but act locally" (European Commission, 2009; Covenant of Mayors, 2011). Furthermore, the Covenant aims at increasing the use of renewable energy sources on the relevant territories, and at the "creation of skilled and stable jobs, not subject to delocalisation; healthier environment and quality of life; enhanced economic competitiveness and greater energy independence" (Covenant of Mayors, 2011).

In order to reach these goals, the Covenant has set up a model similar to a transnational city network providing a governing structure that should enhance cooperation between municipalities across Europe. The most important network facilities that should therefore be applied are the following;

first, information exchange and the provisioning of information on best-practices is provided by the Covenant through several initiatives. A first database: 'Benchmark of Excellence' shows a list of relevant examples of local initiatives realised by Covenant signatories. Moreover, the catalogue of Sustainable Energy Action Plans (SEAP) provides an overview of the strategies to reduce local produced GHGs applied in municipalities throughout Europe. Both information sources can possibly serve as inspiration for other signatories. Second, the Covenant offers multifaceted financial and technical support to its signatories, by granting a special status to public administrations and networks in assisting signatories to fulfil their goals. Several organisations – Covenant Coordinators, Covenant Supporters, Covenant of Mayors Office, Joint Research Centre, and the EU institutions – provide an institutional structure for its coordination. Such support is crucial to municipalities often lacking "technical and financial resources to live up to their commitments" (Covenant of Mayors, 2011). Even those authorities that have shown political will to sign or to undertake action, often come across technical or financial stumbling blocks. Finally, by the set-up of information campaigns and initiatives for awareness rising, the Covenant aims at recognition and public visibility of cities and towns taking part in the Covenant (Covenant of Mayors, 2009).

1.3.   Research objectives

The aim of this research is to obtain an insight in the functioning of a relatively new form of multilevel governance, the network of the Covenant of Mayors. To do so the focus coincides with the initiative's main goals. First, the vertical interaction between the local and regional level and the European level is investigated. It has been widely noted that enhanced vertical interaction allows authorities of both levels to bypass the national level. The latter is often seen as a delaying factor in implementation. European policies habitually pass several governmental levels and bodies before they end up at the desired location. This process occurs with a possibly avoidable time lag (Hix, 2005). Increased interaction between the local and European level facilitates the implementation process since local interests are taken directly into consideration. Additionally, providing financial resources and hence empowering local institutions to design adequate policies, increases acceptance of European interference by the broad citizenry. This research wants to find out whether enhanced vertical interaction occurs as a result of the Covenant, whether it provides the opportunity to local level authorities to voice their interests and feel involved in European policy making.

Second, the horizontal component stimulates cross-border transfer of knowledge and expertise, enhances political recognition, and facilitates the application for financial and political resources (Kern *et al.*, 2012; Bulkeley, 2006). It is widely acknowledged amongst scholars, these facilities improve the quality and development of local climate and energy policies. Mainly the possibility of

obtaining additional resources and political legitimacy persuades authorities to engage in horizontal cooperation (Betsill & Bulkeley, 2004). However, questions regarding the influence of these facilities on membership, the practical use and accessibility remain unanswered. Therefore this research will find out whether the facilities inherent to horizontal cooperation (for an overview of these facilities see section 2.8. The facilities of transnational municipal networks) are applied by the Covenant's signatories and whether they have contributed to the set-up of local sustainable energy initiatives and projects.

Finally, the combination of these two enhanced linkages is assumed to increase energy efficiency in urban areas, increase the use of renewable energy, facilitate implementation and increase the access to network facilities for municipalities/urban areas (Covenant of Mayors, 2011). Therefore, the outcome of the Covenant of Mayors is researched. Both vertical interaction and horizontal cooperation is intended to enhance the launch of local level energy initiatives. The set-up of local projects is discussed with the respondents in order to find out whether a causal link with signing the Covenant can be detected.

1.4.   Research questions

Based on the previous sections, the following research questions can be set forth. Regarding the first research objective, one of the main goals of the Covenant has been the enhancement of communication between the local authorities and the supranational level.

1. Does joining the Covenant of Mayors enhance the possibilities for municipal authorities to represent their local interests at supranational level?

Second, literature on city networks repeatedly mentions the importance of network facilities. It is figured out whether the Covenant is able to provide similar network facilities as TMNs.

2. Are the network facilities offered by the Covenant of Mayors – such as information sharing and accessibility to additional financial resources – accessible to authorities joining the initiative? Are these facilities being used by the local authorities?

Finally, this study will find out whether the Covenant has had an influence on the development of new local policies and other measures aiming at increased energy efficiency and/or renewable energy use.

3. Do new policies and other measures aiming at increased energy efficiency and/or renewable energy use, have been designed as a result of joining the Covenant of Mayors?

Although it is widely acknowledged that evidence of the impact of urban climate governance in terms of GHG reductions or reducing vulnerability risks is lacking (Bulkeley, 2010), it is beyond the aim of this study to measure performance. Nevertheless, as part of this study, it is interesting to find out whether the Covenant has facilitated the process of development and implementation.

1.5.   Research methodology

In order to find an answer to the research questions raised above, the local impacts of the Covenant of Mayors are researched by the use of a comparative case-study. Two European provinces are selected to deepen the understanding on the ability or the lack thereof of local municipalities to use the facilities provided for. The province of Barcelona and the province of Zealand are one of the many regions across Europe responding enthusiastically to the recent initiative. A first section explains the relevance of this research set-up in the broader area of transnational governance studies. The selection of the two regions and the different municipalities as separate cases is examined in a second section. Finally the methodology applied to find an answer to the research questions are set out in a last section.

1.5.1. Literature relevance

Literature on local climate governance mainly focuses on the local aspects (Kousky & Schneider, 2003; Byrne *et al.*, 2004; Slocum, 2004; Byrne *et al.*, 2005; 2006), the intermunicipal relationships (Lindseth, 2004; Byrne *et al.*, 2007) and the effects of domestic and global policy upon municipal politics and policy-making (Bulkeley & Kern, 2006; Hjerpe & Linner, 2007). Similar to the bulk of research, this study focuses on the local aspects of the Covenant and the facilities it offers, the relations shaped as a result of joining the initiative, and the effect of supranational policy upon municipal climate governance. Additionally, it looks at the possibilities of local authorities to voice their interests on the supranational level. Such an approach fits to the smaller, but important portion of the literature investigating the role of the municipal authority in European climate governance (Bulkeley & Betsill, 2003; 2006).

1.5.2. Case selection

This section addresses the selection of the different cases. The performed case-study compares two regions of two different European Member States, by studying the local impacts of the Covenant on the local authorities, i.e. municipalities. These two regions function as so called 'covenant coordinators'. The regional authorities provide financial, technical, political and administrative support to the municipal authorities enabling them in the fulfilment of their commitments (Covenant

of Mayors, 2013). They are so called 'supporting structures'. In case of Denmark, the region of Zealand is the regional authorities in charge of reaching out to the local authorities. La Deputation Provincial de Barcelona performs this task for the province of Barcelona. The provincial council is a local governmental institution promoting the advancement and welfare of citizens in its territory (La Diputacion de Barcelona, 2012). These two sub-national authorities are the first two cases as part of the research sample and are represented respectively by Bjarne Rasmussen, Sustainable Development Manager and Coordinator of Sustainable Region of Zealand, and Domenec Cucurull Descarrega, environmental service manager of the Deputation of Barcelona.

These regions are home to the municipalities that have signed. In the first region, the province of Barcelona (Spain), 155 municipalities have signed and 133 municipalities have submitted their Sustainable Energy Action Plan (SEAP). The latter means they are committed to reach their emission reduction target and are accepted as members. Of these signing authorities a sample of 9 is selected representing the whole region. The province of Zealand (Denmark) is the second region and is home to 11 signatories of the Covenant. From this number of signatories, 6 cases have been selected.

The selection of the municipalities inside the two provinces occurred on the basis of the following criteria: proximity, commitment to combat climate change, and population. It is acknowledged that the quality of this research would be enhanced if a broader selection of criteria would be applied. Nevertheless, because of the rather low level of response from municipalities when requesting an interview, the ability to apply the criteria has been limited. First, 'proximity' indicates the distance between the provincial capital and the municipality of interest. The remoteness to the provincial capital is diversified amongst the different cases to examine the possible influence of the powerful capital on its surrounding local authorities. Second, the commitment to combat climate change, i.e. the efforts and willingness of municipalities to implement policies and measures to combat climate change, is briefly examined by screening the municipality's set of climate change policy. It ranges from energy issues to sensitization campaigns. A sample including a range of municipalities including laggards and pioneers has highlighted the differences in the use of the facilities provided by the Covenant. Finally, the third indicator is population. The aim is to make a selection of municipalities with a diverse number of inhabitants. In very general terms it is assumed higher populated municipalities can liberate more resources to implement adequate energy policies.

The research has opted for two cases that differ on two levels. First, being 'European-minded' indicates to what extend the local and regional authorities are willing to adopt local policy to supranational policy. Second, committed to combat climate change indicates to what extend energy and climate issues are addressed by the local and regional authorities. The following sections explain

why these two regions, the province of Barcelona, Spain and the province of Zealand, Denmark are selected and which municipalities are incorporated in the research samples.

The Province of Barcelona

The province of Barcelona and its capital, the city of Barcelona show commitment to combat climate change. The city of Barcelona has accredited itself with the label of 'frontrunner in combatting climate change'. It has been developing a concise set of adequate measures and policies and has shown commitment on the international and European level by joining city networks (UCLG, Metropolis, C40) and hosting several important summits (Barcelona UN Climate Change Coference) and fora (UN-HABITAT's World Urban Forum). In the Barcelonan Plan to Mitigate Climate Change, the local government has set forth three main goals. First, sectors not included under the EU's Emissions Trading Scheme should have reduced 5.33 million tonnes of CO_2 equivalent on a yearly basis during the commitment period (2008-2012). Second, sectors covered by the EU-ETS should have focused on improving energy efficiency or compensating excess emissions by buying carbon credits from flexible mechanisms. Finally, the third goals has been setting up informational initiatives, awareness campaigns amongst the broad public, and promoting research. In order to involve the broad Barcelonan citizenry in drafting this strategy, the local authority has been cooperating with the Catalan authorities. Catalonia is the autonomous region of which Barcelona is one of the provinces. The Catalan Convention on Climate Change was held to provide "a structured view of the types of measures that might be undertaken in Catalonia to mitigate climate change" (Generalitat de Catalunya, 2008). Because of the involvement and contribution of a diverse range of entities during this participatory event, the initiative has been evaluated as highly positive. Additionally, a post-Kyoto strategy has been set-up to secure continuation of current policies and to open up new fronts of action. Moreover, Catalonia has set itself on the right track to achieve the goals for 2020 by aiming at a 10% emission reduction compared to 2005 levels in the diffuse sectors. Hence, the province is setting measures in line with the international and European framework, and with the Bali roadmap for the post-Kyoto agreements (Generalitat de Catalunya, 2008). However, the question remains whether these progressive intends will eventually lead to concrete action.

The province of Barcelona is selected as a first case since it has strongly committed itself to combat climate change. The province, the city and the municipalities show a policy agenda in which measures tackling climate change play an important role. However, action have been described on paper by setting up promising objectives, but concrete projects are hard to detect. Moreover, the province is European minded and intends to tune local policies to the European example. Being European minded and commitment to climate change has become eminent during the first years

after the launch of the Covenant. A significant number of Barcelonan municipalities have shown interest in the initiative and consequently membership in the region boomed rapidly. In the case of Barcelona, the selection procedure has led to a sample composed out of the following municipalities: Terrassa, Manresa, Rubí, Polinyà, Sant Quirze del Vallès, Avià, Santa Perpètua de Mogoda, Santa Comola de Gramenet, and Barcelona

The Region of Zealand

The capital of Zealand, Copenhagen has been a pioneer in climate change and energy policy for some time in history. A long standing tradition in addressing environmental issues has certainly helped in reaching the current status of forerunner. In the international and European scene, the city has profiled itself as an example on how to develop an urban area on a sustainable basis. In the European Green City index, Copenhagen scores 87.31 on 100, meaning the most progressive city in Europe in terms of environmental policy. On topics like energy and CO_2-emissions, Copenhagen scores second best. Towards the future, the city commits itself to progressive emission cuts, such as its objective to become climate neutral by 2025 (Siemens, 2010). The city has a clear action plan and strategy in mind regarding the preferred course its energy use should follow in the future. This quite ambitious reduction target proofs the commitment of Copenhagen to combat climate change and outrun the European policies calling for member states and cities to reduce GHG emissions by a minimum of 20% by 2020.

The region is selected as a second case since its strong commitment to climate change has translated itself in concrete action, to a level that the region is regarded as the pioneer in Europe. The city of Copenhagen is member to a range of climate change initiatives, such as the C40 city network. Joining the Covenant has also shown to be popular amongst the signatories in Zealand. Nevertheless, the region is less European minded compared to the province of Barcelona. In the region 11 municipalities have signed up and submitted their SEAP. Hence, the case selection limits itself to these 11 cities and towns and therefore no criteria are used to make a selection. 6 out of 11 municipalities were willing to give an interview. These are: Næstved, Ringsted, Roskilde, Solrød, Lolland and Sorø.

1.5.3. Research methods

The required information is retrieved by primary research. Qualitative interviews are conducted at mainly the local, municipal level and the sub-national, regional level. By the use of semi-structured interviews, this research has gathered the necessary data from the two provincial governments and the 15 different municipal authorities these two regions inhabit. It is opted for a semi-structured

interview to provide room to discover key-issues that cannot be foreseen at forehand and hence stand the chance to be missed out on. The subject for the interview is the civil servant in the municipality or the official in the provincial government, working on energy and/or climate change, and/or responsible for the implementation of the Covenant. It is argued that civil servants have more valuable knowledge at hand about the technical and even political aspects of (policies related to) the Covenant. Regarding the technical aspects of municipal policies, they can liberate insights on the number and details of projects related to energy and climate. Moreover, civil servants are the key actors to explain the additional value or the lack thereof of the facilities linked to membership of the Covenant. The institutional response and the possible future role of the Covenant are matters on which civil servants have a more substantiated view than do politicians. Similar to politicians, since they are the key actors in the development of policies, civil servants do have enough knowledge about the political decisions made and the reasoning behind it. Answering the research question on interest representation is therefore not a problem.

A second source of data is the so-called 'grey literature'. Several documents and information sources serving this purpose are the following: the Sustainable Energy Action Plans (SEAP) of the different municipalities (these can be found on eumayors.eu under the section of signatories), documents of the town halls of the municipalities in which local projects are explained, existing Energy Action Plans of municipalities that are working on energy or related topics, data from related organizations such as the EU institutions and other networks in which the municipalities are active, e.g. Xarxasost in Catalonia, and Energycities for Copenhagen.

1.6. Research outline

This thesis research report is based on a clear structure which starts off with Chapter 2: Theoretical Framework. This section operationalizes and explains the different concepts and theories necessary to understand the issues at hand. By doing so, it provides the reader with the essential background knowledge in order to understand the comparative case study and its results. A first section explains the functioning of municipal climate governance in an increasingly Europeanized and multi-level policy context. Thereafter, the reasoning behind the growing importance of local authorities in European and international climate change governance is described. A consequence of this evolution is the growing importance of TMNs. Since the Covenant enhances both vertical and horizontal cooperation, the continuation of this chapter is therefore divided in two main parts. A first section elaborates on the vertical interaction between the local and subnational authority level. The concept of territorial interest representation is defined followed by an overview of the different strategies for local authorities in their quest to address the European policy makers. A second section enlists the

different facilities a TMN and hence the Covenant of Mayors, offers to its members. Both the insights on territorial interest representation and the clarification on the facilities of TMNs are essential to understand the main objective of the Covenant of Mayors. The theoretical framework is wrapped up by a section repeating the dual structure of the Covenant and how it links up to the concept of multilevel governance in the European Union and the dynamics of Europeanization.

These theoretical background form the guidance throughout the chapters reflecting on the empirical results, i.e. Chapter 3: Vertical Cooperation, Chapter 4: The facilities of the Covenant of Mayors and Chapter 5: The outcome of the Covenant of Mayors. The empirical findings are divided in three chapters to enhance the readability. The structure of these chapters follows the dual character of the Covenant for the first two sections. The first chapter studies the emergence of new opportunities for local authorities to voice their concerns at the supranational level. Empowerment of the local level is one of the main goals of the Covenant. In order to understand the role of the local authorities in the functioning of the Covenant, the national and regional policy context is set out for both the region of Zealand and the province of Barcelona. The following chapter describes the network facilities of the Covenant of Mayors into detail. It tells about the different facilities and the added value or the lack thereof. A third chapter explains how joining the Covenant has facilitated the emergence of local climate change and energy related initiatives in the researched municipalities.

Following the empirical findings is the final Chapter 6: Future perspective and discussion. The chapter discusses briefly the future perspectives on the Covenant of Mayors of the different signatories. That perspective is followed by the section on the conclusions; wrapping up the main findings of the study and providing recommendations for further researchers and for network practitioners on the ground.

Chapter 2. Theoretical framework

In order to provide concrete answer to the research questions, this section provides a theoretical background on transnational, European climate change governance and interest representation. It aims to provide the reader with more general insights based on existing literature, necessary to understand the main analysis. In the first place, the dynamics of Europeanization and Urbanization will be explained in order to identify the changing basics of policy analyses (2.1., 2.2., 2.3.). It is in this context that the characteristics of the Covenant of Mayors are to be understood. In these new interconnected policy structures, local authorities gain attention because of their growing importance in global and European environmental governance (2.4.). Their role in the European decision making process is addressed. Moreover, local authorities have joined forces through the set-up of Transnational Municipal (Advocacy) Networks (TMN). The occurrence, history and characteristics of these networks are of key focus because of the similarity between TMNs and the Covenant of Mayors (2.5., 2.6.). The possibilities for territorial interest representation of local authorities are studied first (2.7.), followed by the possible facilities such networks offer to its members (2.8.). A final section provides a concise wrap up of the theoretical knowledge to open the floor for the empirical findings (2.9.).

2.1.   The 'ization' of policy analysis

The issue of climate change poses the question to basically every level of authority how to redirect its organisation and policies to ensure a sustainable future. Climate change is a "wicked problem" with causes and consequences that occur across borders and with impacts that vary widely across ecosystems and regions in the world (Martins & Ferreira, 2011). As the nature of the problem suggests, cooperation between authoritative entities becomes crucial to provide an adequate response.

The analysis of local level climate policy in the European Union has to be understood in a wider policy context which has increasingly been Globalized, Europeanized and Urbanized. As proven multiple times before and acknowledged internationally by 193 parties signing the Kyoto Protocol, climate change is a problem of global magnitude and should therefore be addressed on an international basis (UNFCCC, 2010). Globalization, or the process of international integration has occurred due to an increase in the connectivity and hence the interdependence of actors in society, economy and politics. Not only the process of decision making becomes increasingly influenced by external factors, the preceding norms and values are shared by an increasing number of relevant actors.

Similar to the process of Globalization, European policy making has been subject to norm diffusion. Policy making on different levels by distinct public officials, private stakeholders, and societal interests has been based on increasingly similar norms and understandings. This phenomenon on the European level has been baptised "Europeanization" and is to be understood in the multi-level governance system of the European Union. The role of local authorities and their networks fits neatly in the understanding of a Europeanized context.

2.2.   Multi-level governance in the European Union

European policy making is characterized by multilevel governance. In such a system, competences are not only being shifted between multiple levels or spheres of governance such as the local, national and supranational, but also the entire range of actions and institutions which provide order, are taken into account. This means that traditional interpretation of sole public regulation by the state is not applicable anymore. Governing includes public–private partnerships, non-state actors and many more (Hooghe & Marks, 2003; Bache & Flinders, 2004; Rosamond, 2007; Bache, 2008). As Kern and Bulkeley reflect on authority in such a system, it "has not simply shifted upwards to European institutions, it has become dispersed across multiple territorial levels and among a variety of private and public actors" (Kern & Bulkeley, 2009, p. 311). Moreover, since many European member states' central governments have undergone the practice of decentralization and local authorities have seen their competences expanded, authority has also shifted increasingly to the national and the sub-national level (Pierre & Peters, 2000). Public policy makers and private institutions can become active at different levels and pursue multi-level strategies such as venue shopping (Baumgartner & Jones, 1993; Repetto, 2006; Birkland, 2007; Rosamond, 2007; Kern & Bulkeley, 2009). Giving any concrete direction to the dynamic of moving competences, authority and power and pinpointing vast boundaries in the resulting governance landscape of Europe, is a challenging exercise. The theory of Europeanization takes this debate further.

2.3.   Europeanization

The concept of Europeanization complements the theory of European multilevel governance. It provides a sense of direction and means of multilevel governance (Pollack, 2005): "Europeanization encompasses not only the domestic impact of European-level institutions but also the impact of the EU Member States' actions on EU institutions" (Kern & Bulkeley, 2009, p. 4). Research on the topic of Europeanization has boomed in the past 20 years (Marciacq, 2010) and matured throughout the last decade (Goetz & Meyer-Sahling, 2008).

The inflationary growth in research has led to the emergence of a somewhat scattered range of different definitions, models and concepts often only valid in its specific research set-up. Some intent to asses and systematize the literature on Europeanization and try to conclude with an all-embracing definition to take the debate forward (Bache, 2002; Howell, 2002). Nevertheless, a broad variety of theoretical approaches remain used throughout literature. Although one wants to avoid putting an oar into a delicate theoretical debate on Europeanization, considering a substantial part of the existing literature is indispensable to understand the concept. Therefore a modest wrap up of the existing theories is provided here, concluded by an overarching definition.

Ladrech (1994) is the first scholar highlighting the development in the organization of domestic policy making which increasingly responds to the norms and logic of the European political system. Europeanization is "[...] an incremental process reorienting the direction and shape of politics to the degree that EC political and economic dynamics become part of the organizational logic of national politics and policy-making" (Ladrech, 1994, p. 69). Ladrech's wording refrain from indicating a direction in which Europeanization occurs. However, the bulk of scholars understand Europeanization as a unidirectional process of "downwards causation". By this understanding, the domestic policy area (policies, political and administrative structures) is subject to, and transformed by distinct modes (rules, procedures and policy paradigms) of policy-making at the European level (Börzel, 1999; Goetz & Hix, 2000; Radaelli, 2000; Bache, 2002; Buller & Gamble, 2002).

Other literature assumes that the interaction and direction between the dependent and independent variable is very much blurred (Bulmer & Burch, 2001; Howell, 2002). Another way to understand the direction of Europeanization is by a bottom-up approach. The reason behind such an approach is the changing role of the domestic level. Lower level authorities no longer function as a passive subject 'downloading authoritative European regulations', but increasingly grasp current opportunities to voice their local and regional preferences at the European level. A bottom-up approach also questions the assumption that actors and institutions react in an identical way to the same external dynamics, as indicated by a top-down approach. A bottom-up understanding bares in mind the local and regional specific characteristics, social and political preferences (Wallace, 2000).

Based on this literature and inspired by Helen Wallace's (2000) and Flockhart's (2010) reconsideration of the concept, Europeanization is defined as followed:

> "An interactive process of a redirection of policies and/or practices and/or preferences in the domestic arena towards those advanced by dominant EU level actors/institutions"

This definition is mainly based on the one formulated by Bache (2002, p. 7). It holds this research' preference because of its following characteristics: it identifies the process's subject as "policies and/or practices and/or preferences" limiting the key focus to policy related themes. This is a preferred formulation since it rules out possible overlap with other concepts such as European Integration which incorporate social or cultural dynamics. These notions are of no concern here. Moreover, no direction dominates in this definition since influence can come from internal and external factors, from bottom up, top down or by a fellow authority. Although the overall direction is towards the EU-model, no starting point is given in which this process should originate. Only one small adjustment has been made to the formulation of this definition. The notion of "an interactive process" is added, emphasizing the dynamic relation between the different levels of policy making characteristic for a multilevel governance system as the EU.

2.3.1. Three dimensions of Europeanization

Within the given universal definition, several directions can be given to the process of Europeanization. The directions can be classified into three distinct models. First, the Misfit- (Risse *et al.,* 2001) or Top-Down Model (hierarchical Europeanization) (Knill & Lehmkuhl, 1999) indicates sub-national domestic policy changes only occurring under increased European pressure. This theory regards the implementation of EU legislation as a unidirectional and vertical dispersal of European policies and ideas towards the Member States, transposed into national law and consequently implemented at the local level (Beichelt, 2008; Kern, 2010). This hierarchical understanding has shaped the debate on climate governance in the EU and the Member States.

Second, the Bottom-Up (cooperative Europeanization) approach tries to incorporate a distinct range of variables and external pressures resulting from different levels of policymaking. These are the domestic, the local, and also the global dynamics that shape EU policy (Beichelt, 2008). With the growing importance of the EU institutions and resulting number of policies addressing lower level authorities, policy makers of relevant levels have tried to gain access to European decision making bodies. Local level authorities have succeeded in establishing direct links to the EU institutions (Keukeleire & MacNaughtan, 2008). Traditionally, the local level's lobby mechanisms were focused on institutions of the national level. This focal point has moved towards the European institutions. The *'explenandum'* of Europeanization needs to be posited at the local level (Marciacq, 2010). As Marciacq concludes; these external influences originating at the 'bottom' result in "institutional change at the supranational level" (Marciacq, 2010, p. 2).

As a result, development and shaping of EU policies and institutions occurs in cooperation with lower levels of policy making. As Kern explains: "national climate change policy is not implemented in an institutional vacuum but needs to be coordinated and integrated with diverse and fragmented subnational approaches" (Kern, 2010, p. 9). Empirical prove thereof can be found in the research area of EU Climate Change Policy. Before the EU has implemented a comprehensive policy package, a broad range of local green initiatives had already boomed in the early 1990's. Several (pioneer) cities launched progressive policy projects inspiring other urban areas across Europe. Referring to London, Rotterdam, Munich and Stockholm, Kern acknowledges that "such cities have developed more ambitious goals than those pursued by their national governments and the EU" (Kern, 2010, p. 14). At the same time, these pioneering cities set-up and joined numerous transnational city networks in the area of climate change policy. Joining such membership showed the cities' commitment to reducing GHGs. These initiatives should not be forgotten and proof the importance of lower level interests and power in explaining regulations evolving at the supranational level. Characteristic for cooperative Europeanization is that these concepts and initiatives are frequently backed up by EU support, since many of them foster a direct link between sub-national authorities and the EU policy-making bodies (Goldsmith, 2003; Heinelt & Niederhafner, 2008; Niederhafner, 2008). Since the majority of EU regulations are ultimately implemented at local level, it provides the EU institutions with new opportunities when creating a direct link with the local level authorities. Consequently, local level authorities are offered new mechanisms to have a say in the policymaking process at the supranational level. This growing cooperation between the European and local level has consequences for the Member States who lose their role as crucial policy entrepreneurs (Kern, 2010).

Finally, horizontal conceptions (horizontal Europeanization) do not understand Europeanization as a vertical interaction between two policy levels, but conceptualize it as "a reflexive process endogenous to cross-level interactions, which impacts upon both domestic and European structures of governance" (Marciacq, 2010, p. 3). Heterarchical interactions between the different levels of policy indicate that regulations and preferences are no longer uploaded, nor downloaded, but are "cross-loaded" (Howell, 2004, p. 6). Local authorities all across Europe face similar challenges and engage in transnational cooperation, the exchange of experience and development of joint solutions. Ditto formations are very popular in the area of Climate Change Policy, where cooperation between cities has resulted in TMNs. This form of cooperation has known a rapid diffusion of membership as they provide a range of advantages to the signatories. Both European local level authorities and the European Union itself have shown interest in these forms of policy making (Kern, 2010).

Before this theoretical framework turns to the explanation of the role, characteristics and development of TMNs, the role of local authorities in the international and European climate change policy context is addressed. The role of local authorities needs to be clarified in order to understand engagement in transnational networks.

2.3.2. Europeanization of local authorities

As the process of Europeanization indicates, the dynamics of top-down and bottom-up policy influence does not limit itself to the interaction between the European institutions and the member states' governments. Local authorities become affected by supranational decisions and as a result, try to influence the decisions taken (John, 2000; Allen, 2005; Bourne, 2007). Lower levels of authority are becoming increasingly European minded. As it accounts for EU policy in general, it also applies to EU climate change policy which has assumedly altered local practices and policies (Kern, 2010). Local authorities are redirected by overarching European policies, preferences and practices in their decision-making process and formulation of practices and/or preferences (Bache, 2002; Kern, 2010). Vice-versa, local level climate change policies, preferences and practices influence the development of European climate policy.

European legal and financial instruments have a direct influence on local authorities. By the time the issue of climate change was framed as a matter of regional action, triggered by the Rio Summit, local authorities were - in general terms - not much occupied with the issue. The absence of attention to the issue and hence the inexistence of local level policies in place, offered an interesting policy gap. Since the influence of the European Institutions over the continent has expanded significantly during the past two decades, and the issue of climate change has become widely Europeanized since the Rio summit, this gap could easily be filled by European laws and regulations. This event in Rio de Janeiro has made the EU institutions realize that both international and regional action was crucial to obtain significant change. As a result, a number of policies have been enacted that among others increasingly touched upon the competences of local authorities (top-down vertical Europeanization) (Kern & Bulkeley, 2009).

Under the Kyoto agreement the Member States have been appointed national targets and been pressured by the EU to achieve these goals by developing successful national programs, including measures that directly target local governments. The need has become eminent to establish appropriate institutional arrangements and tools to reach these national targets. This has led to a great variety of intergovernmental relations (Kern, 2010). As a result, increased interest representation by regional and local authorities at national, but also European level, increased the

visibility of these local institutions (bottom-up vertical Europeanization) (Rechlin, 2004; Heinelt & Niederhafner, 2008). Various provinces, autonomous regions and cities have set up an office in Brussels or joined a transnational city network to lobby key officials (Kern, 2010). This has also appeared to be in the advantage of European policy makers, who lack a direct link with the local level. In order to facilitate the implementation process, direct contact has been established with local entities.

Concluding, municipalities across Europe have become more like-minded and Europeanized. As they have become subject to a European policy framework, they cooperate across borders to find new policy concepts and solutions to common problems (horizontal Europeanization) (Kern & Bulkeley, 2009).

2.4. The role of local authorities in international climate governance

The issue of climate change has always been framed and understood as a global environmental problem requiring an answer of a similar magnitude. The United Nations Conference on Environment and Development (UNCED) or the "Rio Earth Summit", has been a key-event in moving climate change higher up on the international agenda, getting attention for the issue on local, national, supranational and global level. At this conference, numerous national governments and the European Commission have signed the United Nations Framework Convention on Climate Change (UNFCCC) by which they have committed themselves to undertake action. Hence the responsibilities of implementing these commitments lie with the national (and in Europe, the supranational) governments (Collier, 1997). In the international debate on the abatement of GHG emissions, engagement has been limited to nation states, while non-state actors – coalitions of states, sub-national governments, or ngo's – have been neglected (Toly, 2008).

In the years following this same Summit, awareness on the local dimension of climate change and consequently the actions that should be taken at this level, has grown. Additionally, important influence on policymakers comes from the main scientific panel on climate change, the Intergovernmental Panel on Climate Change (IPCC). The focus of the IPCC on urban areas has also triggered local level action. The Fourth Assessment Report (AR4) states with confidence that "changes in the global climate are now unequivocal and its impacts are underway with consequences for both urban and rural areas" (Martins & Ferreira, 2011, p. 345, based on Solomon, et al., 2007 and Parry, Canziani, Palutikof, van der Linden, & Hanson, 2007).

Global climate change affects local municipalities in three different ways. First, Urban areas and their excessive consumption levels are responsible for a severe pressure on the globe's environment. They are world's number one polluters and consumers of natural resources to maintain their key economic activities (Evans *et al.*, 2005; Sanchez-Rodriguez *et al.*, 2005). What Toly (2008) calls 'the globalization of environmental ills' refers to the externalization – and therefore globalization – of resource depletion, pollution such as e-waste and nuclear waste and risk of climate change. With a constant growth of inhabitants this situation is not likely to change in the nearby future. Urban areas are home to the lion share of the globe's population, economic activity, and physical infrastructure (Martins & Ferreira, 2011). Of the global anthropogenic emissions of carbon dioxide, cities account for up to 75% (Stern, 2006; International Energy Agency, 2008). In particular, 80% of the energy used and consequently of the GHG emmission in Europe occurs in urban areas (Covenant of Mayors, 2009). This is of no surprise, taken into consideration that currently over half of the world's population and 75% of the European population lives and works in urban areas (Covenant of Mayors, 2009; UN, 2011). The rhetoric of attributing the lion share of emissions to cities should be nuanced and a more careful analysis should be made. As Dodman (2009) and Satterthwaite (2008) argue that the positive overall effect of a lower per capita GHG emissions of urban dwellers is a possible benefit that absolute numbers cannot elucidate. Whether cities should be seen as the root of the climate change problem or not, they will be more likely to feel its mayor impacts.

Second, the dense concentration of physical infrastructure is increasingly vulnerable for natural hazards that are expected to exacerbate in urban areas around the world because of a changing climate (Hunt & Watkiss, 2007; Satterthwaite *et al.*, 2007; Wilbanks *et al.*, 2007). Moreover, cities are often located in vulnerable geographic areas, such as valleys, coastal areas, or riverbeds. These areas are vulnerable to climate change which may lead to extreme events, frequently returning problems and rising environmental stress levels (Kern, 2010; Bulkeley, 2010; Seto *et al.*, 2010).

Third, although cities are a key contributor to growing GHG levels, local authorities' legal responsibility and jurisdiction provide a broad scope of opportunities to act on the issue of climate change (Bulkeley & Betsill, 2003; Robinson & Gore, 2005; Sattertwaite, 2008; Bulkeley *et al.*, 2009; Puppim de Oliveira, 2009; Bulkeley, 2010). The potential role of municipalities in, and their contribution to climate governance has been widely noted (Toly, 2008). The following reasons are mentioned throughout the literature to support this view. First, a typical aspect of municipalities is their technical leadership (Toly, 2008). Urban areas are the key-centre of innovation with the presence of advanced clean energy systems, sustainable transportation and waste management that can contribute to GHG reductions and adapting to new challenges (Alber & Kern, 2008). With the

latest climate change science accessible in a nearby academic institute, city governments can cooperate with scientists and other experts (OECD, 2009). Technical leadership which is increased because of a numerous informal networks is a legitimizing force in, and of global environmental governance (Toly, 2008). Consequently, cost-effective policy responses can especially be developed at city-level (Rosenzweig *et al.*, 2011). Second, local level authorities have numerous powers at their disposal. Often they control a number of policy areas providing them with a scope of possible actions regarding the sectors responsible for a significant share of local level GHG's. As Martins & Ferreira put it: these "areas and sectors can influence many activities that are not only critical sources of GHG emissions such as transportation and energy use, but also key instruments for managing and reducing urban climate risks such as land use regulation, zoning, civil defence and disaster response and mitigation" (Martins & Ferreira, 2011, p. 346, based on Wilbanks & Kates, 1999; Robinson & Gore, 2005; Dawson, 2007; Satterthwaite *et al*, 2007; Bulkeley *et al*, 2009). European policy offers an example; the 'subsidiary' principle, highly valued in European policy making and set out in the Treaty on the European Union requires decisions to be made as close to the citizen as possible (European Commission, 1992). Hence, local authorities are attributed with an increased number of competences related to transport, heating, energy, domestic and service sectors. Nevertheless, this can differ hugely according to region and Member State. Efforts taken in these areas are greatly welcomed by the European Commission in order to reach its sustainable development goals.

Concluding, it has been become evident that municipalities are significant non-state actors in global and European environmental politics (Sassen, 1994; Taylor, 2001; 2004). Local authorities are the closest administration to the citizens and more accountable to the population. They ideally understand the prevailing concerns, can easily involve the wide range of interests and handle the pressure from interest groups on a daily basis (Puppim de Oliveira, 2009; Birkmann *et al.*, 2010). Additionally, these authorities do not face strategic conflicts like their national colleagues do. Because of this proximity, the municipal government functions as a norm entrepreneur framing the understanding of the issue of climate change (Toly, 2008). The authorities are governed with a flexibility not enjoyed by nation states, since they are smaller and decisions can be taken faster (Portney, 2003).

These discourses of causes and consequences together with a restructuring of the state's authority and operational structure, have suggested a level-up of climate change on the political agenda of lower level policy makers (Bulkeley, 2010). The potential importance of municipalities as sites for addressing the issue of climate change has been widely recognized. As Martins & Ferreira (2011, p. 345) articulate: "the relationship between cities and climate change is usually based on a complex

interaction between vulnerability and responsibility". Urban transformations are necessary to formulate a comprehensive response to the threat of climate change. Although such transformations will take some time to occur, cities have shown interest in undertaking action (Satterthwaite *et al.*, 2007; Bicknell *et al.*, 2009). These non-state actors contribute now and in the future to solutions to counter climate change (Toly, 2008).

Subsequent to the development and incorporation of Local Agenda 21 into local policy, local authorities have mainly begun to react to the issue. Although powers of local authorities and their exact nature vary considerably, the scope for action remains in most cases significant. Climate action at the local level shows a significant devotion by the authorities. Since these non-state actors do not have direct nor binding commitments under the UNFCCC and the Kyoto Protocol, local authorities undertaking action show a political will and a strong devotion to solving the problem (Bulkeley & Betsill, 2003; 2007). Numerous municipalities have become more involved in solutions to climate change over the years.

2.4.1. Lack of vigour in urban climate governance

Climate governance has become a key strategic issue for municipalities across the globe. Local level authorities provide a favourable arena to implement climate change policies, because of their proximity to the constituency, their flexible nature, and their jurisdiction and control over relevant areas. In order to fully understand the local context to develop climate change policy, this paragraph looks into the stumbling blocks that lower level authorities encounter in the development of a comprehensive policy response. The main factors determining urban climate governance are the following: capacity and resources, the political landscape, power and competencies, and motivation. Such an insight is useful to understand the possible role of transnational networks and their facilities that provide an answer to local needs.

First, determining for the urban capacity, the extent and the efficacy of measures to respond to the issue of climate change are the availability of human, technical and financial resources and capacity (Holgate, 2007; Martins & Ferreira, 2011). A lack of institutional capacity is commonly explained in terms of "fit" and "misfit". One talks about a misfit when there is a "lack of coincident boundaries between the scale of the issues that need to be addressed and the competences of the municipal authority" (Bulkeley, 2010, p. 242). The authority in question is not well established to address the problem at hand. It lacks the competences to take decisions. If this is the case, coordination between different levels of government is essential. Institutional capacity also refers to the internal dynamics. Characteristics of the environmental department of the municipal authority – often responsible for

the issue of climate change – are its limited implementation power and the inconsiderable role it plays in the municipality's organizational structure (Alber & Kern, 2008; Bulkeley *et al.*, 2009). Therefore: "mainstreaming, coordinating and cooperation across agencies is vital" (OECD, 2008, p. 69). Institutional fragmentation is not a sole lack of capacity that limits municipalities in their scope of action, scarce finances is another one. Financial resources are necessary to increase the understanding of the problem of climate change. Research to develop or gather the necessary knowledge is expensive. Assessing local GHG emissions requires data of which the process to develop it, is costly and resource intensive (Allman *et al.*, 2004; Lebel *et al.*, 2007; Sugiyama & Takeuchi, 2008). The degree to which local authorities have sufficient scientific knowledge is often questionable. Financial capacity is indeed an important requisite to work on local policy. Local revenues just fit the requirement of recurrent expenditures and in case of left overs, are spend on debt repayment. Additional capacity is necessary to make investments. Kern acknowledges and indicates that financial capacity does not only depend on city-specific factors, but also on national preconditions, by e.g. national funding schemes (Kern, 2010). Bulkeley (2010, p. 243, based on Bulkeley & Kern, 2006; Granberg & Elander, 2007) indicates the importance of external sources for funding: "the ability to access external sources of funding has been a key factor in determining which municipalities have put some policies and measures into place". Moreover, technical and financial capacity is also of key essence in altering existing energy systems and networks (Monni & Raes, 2008).

Second, these stumbling blocks are framed in a political context. Characterizing the political landscape are the short mandates that shape local authorities (Martins & Ferreira, 2011). The difference in political interests between municipalities is significant. Not every municipality is convinced that its authority is responsible for tackling climate change (Bai, 2007). As Qi, Ma, Zhang, & Li mention, this is a question of personal motivation. For some municipalities providing a policy response to the issue means a constraining influence on opportunities for local development, growth in human facilities and economic activity (Lasco *et al.*, 2007). Others foresee local conflicts between environmental and development goals as a result of putting into place carbon control policies. Then again, local authorities from regions vulnerable to climate change will be more likely to prioritize adaptation than to focus on mitigation measures (Sattertwaite, 2008).

Third, not only the political context, but also the political structure influences the autonomy of local level governments to develop local policies. In countries where local authorities enjoy a higher degree of independence, "state-local relations are more cooperative and the national government is in a considerably weaker position in terms of its influence on the implementation of climate change

policy at local level" (Kern, 2010, p. 9). As the study of Kern (2010) shows, relatively strong local authorities, such as the Netherlands and Sweden were the first to introduce funding schemes, to support capacity building and preparations for climate change policy, and low-carbon investments. Numerous municipalities however suffer from a lack of power and autonomy to regulate specific, GHG intensive sectors (Ligeti *et al.*, 2007; Parzen, 2009; Puppim de Oliveira, 2009; Martins & Ferreira, 2010).

Finally, the interaction between local authorities and central governments, but also between the international and local level is an important factor. Regarding national leadership can either limit or enhance local authorities. In the absence of national leadership on the issue of climate change – as has been the case in Australia and the United States – a policy vacuum has led to the enhancement of local policy responses (Bulkeley, 2010). This insight might suggest that vertical coordination and supporting structures between different governing layers may not always be necessary to spur local level climate governance. Furthermore, according to Gore & Robinson (2009) it remains questionable whether support from federal institutions to lower level authorities has led to any note-worthy policy outcome or output. In order to keep an overview on the constraints and facilitating factors, Martins & Ferreira (2011) have developed a comprehensive summary (see Table 1).

Table 1: Key factors supporting or constraining local climate governance

Key factors	Enabling environment	Obstacles and constraints
Resource and capacity	Institutional and financial capacity to undertake climate change actions	Lack of financial, human and technological resources
	Presence of a local champion	Lack of commitment from political leaders
	Allocation of financial and human resources	Lack of attention to environmental issues
	Long term urban planning	Short-term view
Knowledge and information	Strong communication and outreach	Business as usual approach
	Vulnerability perception and strong risk management approach	Lack of vulnerability assessment and poor understanding in terms of impacts and extend of climate change
	Strong science-policy interface	Mismatch between policy makers and scientific community
Institutions and governance	Authority to coordinate and regulate climate change actions	Lack of authority and jurisdiction
	National programs to support local initiatives	Lack of national and international support
	Participation in transnational city networks	Poor vertical and horizontal coordination across levels and policies

	Good governance stakeholder involvement and participation strategy	Poor governance structures and difficulties in getting key sectors involved

Source: Martins & Ferreira (2011)

2.4.2. Overcoming these barriers

Four factors have shown to be crucial in overcoming this overtly hostile political and institutional context. First, leadership, commitment and political will have been indicated as crucial factors in addressing the issue within the local agenda (Sanchez-Rodriguez *et al.*, 2005; Bulkeley, 2010; Martins & Ferreira, 2011). Politicians, officials, business individuals or other actors in the municipality have shown to be crucial for a permanent prioritizing of mitigation and adaptation policies. Such technical leadership or capacity is essential to the governance of environmental issues. This type of leadership involves pioneering activities in which the authority is the first to respond to pressing environmental challenges or uses unique methods to counter it. Resulting skills from the conductance of such activities, e.g. feasibility studies or pioneer projects will often diffuse in intermunicipal cooperation. This kind of cooperation comes with a number of governing modes, such as voluntary benchmarking which has proven to be a significant help in generating actions on the ground. It is used in transnational networks where members get inspired by 'best practices' shared by others. A "soft" reward for such pioneer actions, projects or municipalities is political recognition for the best-performing local authority (Granberg & Elander, 2007; Bulkeley *et al.*, 2009; Kern & Bulkeley, 2009;).

Unfortunately, the issue of leadership and pioneering is inextricably linked to a positive spiral of investment. A municipality that encounters the resources to develop an adequate response applies a long term investment and will be rewarded with economic gain which can be reinvested again. For municipalities that find themselves amongst the majority of authorities that are unable to deploy resources to act on climate change, the issue remains of marginal importance (Bulkeley, 2010).

Second, the degree of autonomy and independence from the national government influences the range of governing modes accessible for local authorities. Communities enjoying a strong position in terms of influencing the implementation of local level climate policy succeed in enacting effective policies (Kern, 2010).

Third, processes of reframing, localizing and issue bundling (Koehn, 2008) increase the political acceptance, mobilizes local action and resources, and build local institutional capacity (Lasco *et al.*,2007; Puppim de Oliveira, 2009). Reframing the issue as a local problem with considerable (economic) benefits makes it interesting for a broader public to invest in (Betsill, 2001). Possible issues that can be linked to the process of solving climate change, can be the following: reduced

waste production and management, infrastructure development, transportation and mobility demands, urban development and growth management, air quality and pollution, energy security and safety, but also energy efficiency with clear monetary advantages in terms of savings (Koehn, 2008; Bulkeley & Newell, 2010). This issue linkage refers to what Toly (2008) calls 'normative leadership'. It is the capacity to influence the understanding, framing and hence fundamental basis of a policy problem (read more about the normative change of a policy debate in 'The facilities of transnational municipal networks').

Finally, other important factor to overcome the barriers mentioned in the former section and essential for local level climate policy making, are the availability of funding for assessments and GHG inventories, local power and jurisdiction over key sectors, and the existence of informal networks (Sanchez-Rodriguez *et al.*, 2005; Bulkeley, 2010; Martins & Ferreira, 2011). These later networks possibly assemble research institutions, governmental bodies, political champions and community organizations.

The modes of governing climate change to handle these opposing factors vary hugely across different local level authorities worldwide. Martins and Ferreira (2011, p. 352) have listed a concise set of strategies such as: "networking and partnerships, exercising regulation and authority, self-governing, and enabling an environment for private investments and action". Forms of voluntary governance, as seen in Germany, to create incentives to instutionalize climate change policy at local level, have proven to be very effective (Kern, 2010). Before an answer will be given to whether and how networks can offer facilities that help improving the political environment for the development of climate change policy, the next sections turn to local level climate governance, the growth and history of transnational municipal networks and their role in urban climate governance that is increasingly being characterized by multilevelness.

2.5.   Transnational networks in the area of climate change

Municipal and city-level governance have long been regarded as insignificant in the vogue of political studies. Nevertheless, it has regained importance to an extent that Julie-Anne Boudreau refers to it as 'the centrality of urban politics in a global era' (Boudreau, 2007). As Bulkeley (2010, p. 248) argues: "Urban climate governance has primarily been driven by policy entrepreneurs and transnational municipal networks, reliant on persuasion and soft forms of (self-) regulation".

According to Sassen (2004, p. 3), the window of opportunity for this revival is characteristic to the dynamic of globalization: "the emergence of conditions that weaken the exclusive authority of

national states and thereby facilitate the ascendance of sub- and transnational spaces and actors in politico-civic processes once confined to the national level". Urban areas and municipalities can be understood as these sub-and transnational spaces. Forces that have led to the urbanization of global political processes are according to Boudreau: decentralization and increased intergovernmental relations, conventionally municipal policy interests moving to the national and global scales and conventionally national and global policy interests moving to the local scale, the rescaling of civil society activities, and the continued territorialisation of the policy-making process (2007). The interest of the international level in the dynamics of the local level has grown and vice-versa, urbanists have re-engaged with higher levels of authority. This evolution of urbanization has altered and increased the interest of scholars in urban and municipal influence.

Hoffman (2011) suggests a range of motives explaining the popularity of transnational municipal networks. Global environmental issues are governed by a diverse range of authorities. Such a fragmentation of competences sounds logic because of the nature of the problem. As a result, a range of multilateral, multilevel and international governing processes emerge around the issue to provide an answer to the growing threat of climate change. Unfortunately, these governing approaches have not proven to be successful. A growing sense of failure of the international negotiations and national efforts and dissatisfaction with the multilateral governing processes has shifted the focus to a more regional and local level approach. Local authorities quickly understand the advantages of a "win-win" situation of responding to climate change. It is widely acknowledged in the policy and academic community that investing in a green economy can result in additional economic and social profits. Other authorities sense the need of urgency and argue that municipal authorities can act more quickly and swiftly to the issue compared to national governments. To do so, they desire to expand powers and increase the local allocation of resources and competences to act and react on an adequate basis. Finally, devising a comprehensive local climate response forms part of an ideological expression of certain local actors (Bulkeley, 2010; Hoffman, 2011).

A concise retrospect at urban climate governance, explains the key factors facilitating local climate action. The launch of associations of municipalities came with the founding of the Council of European Municipalities and Regions (CEMR) in 1951. For the decades that followed, no new organizations grouping municipalities or local level authorities arose. This changed considerably with the implementation of the Single European Act of 1986. Before that date hardly any European legislation addressed subnational governments. Parallel to the increase of legislation affecting the local level, the number of cooperation initiatives grew. The 1990s were marked by an increase in

transnational networking across municipalities (Kern & Bulkeley, 2009). This can be linked to a first wave in municipal responses to the issue of climate change in the same period.

Individual responses from cities across the world were initiated by important international conferences, e.g. on the Changing Atmosphere, Toronto, 1988 or nested in the local course of action influenced by a "history of engagement with issues of energy conservation" (Bulkeley, 2010, p. 231) and/or by the context of a growing interest in sustainable development (Collier, 1997; Bulkeley & Betsill, 2003; Bulkeley & Kern, 2006). Involvement in transnational networks has prevented these incremental and small-scale individual efforts to fall into oblivion. In prospect of the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, three noteworthy networks arose. First, ICLEI, the International Council for Local Environmental Initiatives, was launched at the *International Council for Local Environmental Initiatives* in 1990 representing the environmental concerns of local governments on an international level (ICLEI, 2011). As part of the latter, a pioneer project – Cities for Climate Protection (CCP) – has been set up resulting out of the first Municipal Leaders' Summit on Climate Change held in New York in 1993 as a follow-up of the Rio Summit and its call for local action (Betsill & Bulkeley, 2004; ICLEI, 2011). The other two city networks are the Climate Alliance and Energie-Cités (Bulkeley, 2010)*.* The membership of these three networks together account for almost 1,400 European cities and towns, amongst which many capital cities, such as Amsterdam, Rome, Stockholm and Berlin (Kern & Bulkeley, 2009). Initially, these initiatives enjoyed little to no attention from national or international governments.

In case of the European Union, the institutions were having a difficult time since the Rio Summit, convincing the Member States to agree on a supranational strategy to combat climate change. Since the beginning of the 90's, the EU has enacted a variety of policy initiatives to reach its climate goals, e.g. the Renewable Electricity Directive, the Biofuels Directive, the Cogeneration Directive, a carbon/energy tax and a programme for energy efficiency (SAVE). The 1995 White Paper entitled *An Energy Policy for the European Union* exposed the contradiction between the need for common objectives and the devotion of the EU to respect its sovereignty borders set out in the founding treaties (European Commission, 1995). This meant little interference in national matters. The drafting of this policy proposal showed the unwillingness of member states to concede sovereignty in the energy area (Collier, 1997). Although Member States have shown commitment by setting strict emission reduction targets, translating these targets to concrete policy measures has not occurred without a hitch (O'Riordan & Jäger, 1996). Hence, the activities relevant to the issue of climate change at national and supranational level in the European Union have remained relatively marginal.

The initial disinterest of the international community for local climate actions and the networks related to these efforts, changed during a second wave of municipal responses. Approximately all cities noteworthy in terms of climate change related policy have become member of a broad array of initiatives. Although some urban climate governance - whether in the form of transnational networks or individual city policies - emerged before the Kyoto Protocol agreement, the real movement has made considerable progress after 2000. At current times, scholars note stagnation in the growth of networks and stabilizing numbers in membership (Kern & Bulkeley, 2009).

In the early 2000s the trend was set for the development of networks organized on a different geographical level and including actors outside the municipal authority (Toly, 2008; Gore & Robinson, 2009; Hodson & Marvin, 2009). Networking from now on occurred on a more regional or national basis. For local authorities, national or regional examples hold more relevance than international best-practices (Schreurs, 2008). As a response, transnational municipal networks have launched regional or country-based campaigns to enhance cooperation amongst local authorities. Furthermore, national networks have been launched to gather authorities inside the national borders, e.g. the U.S. Mayors Climate Protection Agreement. This approach has been replicated by the European Commission with the launch of the Covenant of Mayors (Bulkeley, 2010).

The new generation of local climate action networks mobilize private actors around the local authority or are formed as grassroots networks with an explicit urban focus (North, 2009). They are increasingly political, gradually include policies on climate change adaptation, and involve cities of the global South (Bulkeley *et al.*, 2009). The more overtly political stance implies the development and communication of explicit interests related to issues such as energy and climate change. Municipalities seek to position themselves as a key-site for addressing the issue. Joining forces on local level enables a position in which municipalities demand a supporting policy framework from the national government in which local efforts can fit closely, or ask for a top-down shift in competences with increasing powers for the local level. Efforts in opposing national governments have been seen in the United States and Austria (Hodson & Marvin, 2009). Not only are bonds strengthened on local level, also on international level a substantial constituency has been formed. The Bali World Mayors and Local Governments Climate Protection Agreement have been signed by municipalities across the globe. The agreement is a pioneer in connecting all the above mentioned networks (Bulkeley, 2010).

The emergence and popularity of transnational networks in the last two decades brought urban areas and local level governmental actors across the globe closer to each other. Municipalities have managed to stress the significance of their role in national and supranational policy making. Increased autonomy and power have made it possible to devise and implement policies that do not

go largely unnoticed. Whether increased power of municipalities made it possible to set up transnational networks, or networks have increased local autonomy, is a trivial question. More importantly, municipalities have gained significant decision making power and autonomy over sectors that do matter in energy or climate related policies.

2.6. Transnational municipal networks in multilevel urban climate governance

Research has shown that a distinct range of frameworks can be used in order to provide insights in specific or broad forms and cases of urban climate governance. In order to analyse the role of the Covenant of Mayors in local climate governance in Catalonia, Spain and Zealand, Denmark, this research uses the multilevel perspective because of tree reasons. First, although the problem of a changing climate poses specific impacts to certain regions on the globe, it is a problem of cross-scale magnitude (Wilbanks & Kates, 1999). Hence traditional environmental politics based on the construction of regimes and a conventional separation between levels of authority seems an inappropriate approach (Martins & Ferreira, 2011). As numerous scholars have acknowledged, an adequate policy response to climate change requires action at different levels of governance ranging from international treaties to adaptation measures in urban areas (Bulkeley & Betsill, 2003; Bulkeley & Betsill, 2005; Adger, 2005; Bulkeley & Kern, 2006; Gupta, 2007; Bulkeley & Newell, 2010).

Second, the crucial role of local authorities and the increased number of competences they have gained, explains the need for a multilevel perspective. In the shift of studying environmental politics from an understanding based on conventional regimes, to a multilevel governance approach, urban responses to climate change played a crucial role. The performance of urban climate governance should be understood in a governance context touching on subnational and local process of policy making (Bulkeley, 2010), a so called multilevel governance structure. The scope of climate action in Europe is highly shaped by a landscape of governing structures and processes carried out by multiple actors from both the private and public sector, with a variety of interests, capacities, and challenges at a variety of levels and by distinct networks (Betsill & Bulkeley, 2006; Granberg & Elander, 2007; Monni & Raes, 2008; North, 2009; Seto *et al.*, 2010; While *et al.*, 2010; Martins & Ferreira, 2011). In this landscape, nation-states have seen their authority been reduced in favour of local level authorities. The cause and effect of this framework is a global trend of this shift in authority. As a result local actors and transnational networks dispose over a range of policy opportunities unknown before. This trend has enhanced the relocation of responsibilities and competencies. Power has been

increasingly acquired to local authorities. Which in turn have questioned the extent to how far the politics of climate change and energy issues is a sole state project.

Finally, transnational municipal networks are determined as an important aspect of this context shaping local responses to climate change (Kern, 2010). Transnational networks are the overtly indication that a place-based and cross-scale problem as climate change requires a policy response based on cooperation. According to Granberg & Elander (2007) the motivation to join and the "glue" that keeps networks together can be found in the numerous opportunities that networks offer. Participation in transnational networks provides access to a flow of facilities to its signatories.

2.7.   Local territorial interest representation

A second goal of the Covenant of Mayors is to enhance interaction and communication between the European Institutions and the local authorities. This chapter shortly describes how the European Commission tries to increasingly involve local authorities in the policy making process. Next, it is explained how interest representation is facilitated through TMNs, followed by the two different modes on how authorities and interest representation organizations interact and how these latter are incorporated in policymaking. Depending on the mode, different strategies of interest representation can be applied. The chapter is wrapped up by an overview of the access points available through which local interests can be communicated to the supranational level. An overview of the modes, strategies and access-points for local territorial interests is provided by Figure 1.

Figure 1. Local Territorial Interest Representation

Consultative mode:
"A selected number of societal actors are incorporated in the policy making process on an ad-hoc basis, based on their resources and qualities"
· Secondment
· Collective interest representation
· Direct interest representation

Local Territorial Interest Representation

Deliberative communication mode:
"A broad inclusion of civil society actors to increase EU legislation's legitimacy"
· Institutional participation/representation

Access points at the EU institutions

EC
· Initiator of legislation
· Initial draft of proposal
· In need of expert knowledge
EP
· In need of expert knowledge to evaluate EC's policy proposals
· Aggregate interests of constituency
Council
· Difficult to approach
· Officials in the COREPER

Source: the author

2.7.1. Local interests in Europe's multilevel governance

The ability of local authorities to organize their interests in the multi-level system of the EU is debatable. It is argued that their position in the decision making process on the supranational level is relatively weak. The nation-state keeps its role as gatekeeper for policies coming from the European level. Nevertheless, recently developing opportunities support a contrary view (Kern, 2007; Heinelt & Niederhafner, 2008). The traditional structures of domestic policy making are increasingly being bypassed by local governments as their role in a multilevel governance system gains importance (Kern, 2001; Le Galés, 2002; Carmichael, 2005).

Europeanization implies the opening-up of a new political sphere in which each level of authority increasingly finds itself in the opportunity to circumvent the level of authority higher-up to reach the highest supranational level. As an example, cities are provided with more independency, not only from the national level, but also from the subnational level (Heinelt & Niederhafner, 2008). As the European institutions try to undo themselves from a democratic deficit and increase their legitimacy, civil society actors and institutions representing aggregated regional interests experience broad inclusion in political decision-making processes. The importance of local government organisations as nearest to the people, is expressed by Heinelt and Niederhafner (2008): "they are able to express the

interests and concerns of the broad citizenry and do not represent just the concerns and demands of certain (self-interested) stakeholders" (Heinelt & Niederhafner, 2008, p. 175).

This intent to shift the model of interest intermediation in Europe is expressed by the Commission in its White Paper on 'European Governance' (COM (2001) 428 final) from July 2001 (UNSPECIFIED, 2001). In this paper there is a strong argument for a stronger systematic dialogue between representatives of local territorial authorities, the broad citizenry and the EU institutions through national and European associations. This quest in empowering the local and national actors has been repeated in their concept of ´systematic dialogue´ introduced in 2004. This 'dialogue' emphasises on the involvement of local and regional associations are incorporated before the formal decision making process starts, with a focus on increasing transparency (Committee of the Regions, 2013). The undermining of this deliberate move to incorporate civil society in the policy debate occurs because EU institutions stick to the current routine approach using the consultative mode. In this latter mode, the EC gathers expertise through a selective set of social actors (Knodt, 2011). This EU struggle between the intention to further incorporate local interests and the institutional stumbling blocks, explains why some scholars argue that the opportunities for territorial interests are widely present and others refer to a very limited role for local level authorities.

2.7.2. Interest representation in transnational municipal networks

Through the means of interest representation, horizontally organized networks like TMNs provide a link between its members and the European institutions. The networks adopt their organizational structure to the decision-making structure of the European bodies and become increasingly Europeanized. In order to let their voice be heard, offices are opened up in Brussels, close to the policy makers (Ercole *et al.*, 1997; Goldsmith, 2003; Kassim, 2005; Lambregs, 2010) and lobby activities are fairly intensified. Horizontal cooperation strengthens their position as interest groups and applicants for European funding. By the means of these newly created communication channels, local governments find ways to participate in the international arena to formulate and implement climate policies. As Betsill and Bulkeley (2004) mention, Transnational Advocacy Networks are forged when domestic actors find their influence over nation-states blocked. As viewed from the perspective of local governments, the dependence on the will and functioning of the domestic policy level restrains the advancement of local policy development. As a result local actors seek different channels to influence the relevant authority, in this case the European Institutions.

For the policy maker in the European Commission, these networks function as an external source of information and expertise. With a constructive input, their access to the European institutions is

facilitated (Goldsmith, 2003, p. 121; Eising, 2004; Heinelt & Niederhafner, 2008; Lambregs, 2010). Networks can function as a help in the process of implementing European policies. These networks are not bound to a constituency or its interests, but intent to disseminate best practices and experience. By doing so, they can develop standards which are to be implemented by the members. Hence, networks provide an important access for European policy makers to the implementing bodies of the European policy landscape, i.e. the local authorities (Kern & Bulkeley, 2009).

2.7.3. Modes of interest inclusion

In order to categorize the strategies for the involvement of civil society actors, Knodt (2011) argues the distinction between two types of involvement. The first type, consultative mode involves a very limited number of societal actors selected based on their resources and qualities (e.g. the provision of expertise) on an ad-hoc basis. Inclusion should "improve the qualities of decision-making and facilitate the implementation of policies" (Knodt, 2011, p. 423). The second type, deliberative communication mode seeks a broad inclusion of civil society actors to increase the legitimacy of the European legislation (Knodt, 2011). These actors are assumed to systematically advocate legitimate regional and preferable aggregated interests (Schmalz-Bruns, 2002). As a result the obtained policy is of a higher quality and increases chances of successful implementation. These two models resemble very well the strategies characterized by Beyers (2008) as inside and outside venues (Beyers, 2008). Two venues are distinguished indicating the visibility of the process of interest intermediation to the broad public. On the one hand, the inside venue reflects policy making behind closed-door and refers to the world of advisory bodies and committees of which the broader audience is only partly or not aware. Outside venues on the other hand are more transparent, visible to the broader public and refer to the communication amongst civil society, interest groups and citizens during policy development (Beyers, 2008). Finally, the inside venues/consultative mode fits in the vision of a system of participatory democracy and so the outside venues/communication mode are part of a representative democracy. The overview of possible interest intermediation strategies can best be done according to the division between these two types.

The first main strategy as part of the consultative mode is secondment. This informal strategy to obtain access has been proven in the past to be very effective. Secondment refers to the "exchange of personnel between different administrations" (Knodt, 2011, p. 426). In the case of territorial interest intermediation, the positioning of regional administrative staff into the European Commission provides a direct voice of a particular region the EU decision making. As the salary is continued to be paid by the region, it is clear that the official as the agent will not hesitate to protect the vision of its principal, the regional entity. Secondly, transnational communication arenas serve as

lobbying instruments and the platform to discuss common problems and its solutions. Collective representation focussing on climate change policy has evolved in a similar way; think about transnational city networks, as discussed above. Third, direct collective representation at the European level (Heinelt & Niederhafner, 2008). The density of civil society orientated networks in Brussels focussing on territorial interest representation has boomed throughout the past two decades. 'Europe of the Regions' as it is called refers to an extensive collection of organisations representing territorial interests at the European level (See Greenwood 2011). Finally, direct interest representation avoid the interference of the domestic policy level which explains the increase of regions and municipalities operating as Brussels-oriented 'lobbyists' for their own distinct interests. As widely argued by scholars of interest representation, collective or aggregated interests likely to carry the support of the broad citizenry or sector are eagerly welcomed by European officials. The goal in this strategy is twofold. On the one hand becoming direct stakeholders in the distribution of costs and benefits with territorial effects of EU public policy decreases the individual costs each public authority has to bare separately. On the other hand these authorities bridge the gap between the local civil society and the EU institutions and therefore act as agents of EU democratic legitimacy (Greenwood, 2011).

The principal and so far only strategy for cities and regions under the communication mode is institutional participation and representation. Several institutions of the EU provide permanent representation possibilities to subnational governments across Europe. The most eminent model of institutionalized territorial interest representation is the Committee of the Regions (CoR). This regional consultative body created after the idea of EESC was pushed for by regional interests and hence entered into the Maastricht Treaty of 1992 (Knodt, 2011). Although the CoR provides regional and local authorities a direct and independent voice in the Council and the Commission bypassing their member states' governments, criticism highlights its merely consultative function (Hrbek, 2000; Greenwood, 2011). Greenwood points out the absence of a direct link between regions and the CoR: "the CoR failed to develop beyond a model of 'experts about the regions' into a model of political representation in EU decision-making" (Greenwood, 2011, p. 442).

As for this section, one understands how territorial interests can be organised in order to effectively influence EU institutions. In the next, it will become clear which channels of influence and points of access on the EU level, territorial representatives should take into consideration.

2.7.4. Access points at the European institutions

How can regional authorities and the associations representing them play a role in the agenda setting and decision making at the EU level? This section will answer that question by analysing the points of access and the channels of influence for every European institution separately. The number of strategies for interest intermediation in general and more especially for territorial interests at the European level is immense. In the following, the key-focus implies the possibilities for territorial representatives (for a comprehensive overview see Lambregs, 2010).

The European Commission (EC) is the only institution that holds a formal right of legislative initiative and hence is in charge of drafting new policy proposals. The official responsible for a legislative proposal working on a blank document is in great need of specific expert knowledge. Accordingly, interest groups play an indispensible role in the agenda setting phase (Bouwen, 2009). Although in that specific moment expertise is the main concern at the address of the EC, later on in the decision making process legitimate decisions based on aggregated interests are crucial. Cities and municipalities find themselves in the position to provide local expertise (e.g. what is technically feasible on the local level) and an insight on what is socially and politically acceptable. The incorporations of representatives of these policy levels will probably increase the legitimacy for, and the acceptance of, the Commission's initiative (Heinelt & Niederhafner, 2008).

Following the EC, the European Parliament offers an interesting forum for – amongst a broad spectrum of organisations – territorial interests to voice their position (Wessels, 1999). It has seen its role in the legislative procedure of the EU growing in the last two decades, increasingly with the approval of the last European Treaties. Powers ran up to a level in some policy areas where they equal the legislation power of the Council of Ministers in the co-decision procedure (Mazey & Richardson, 2006). As the Members of the European Parliament (MEP) are in charge of assessing and evaluating the legislative proposals initiating at the EC, information to substantiate amendments is a prerequisite. In fulfilling a MEP's role, cities and the organizations representing them can be of a great help in providing aggregated interests and local expertise. Furthermore, these local interest groups play a political role in the formation of 'Intergroups' incorporating cities in their membership. The connection of MEPs with cities and the organisations representing them is of no surprise. The MEP's affiliation with domestic interests and national parties is of a manifest concern to maintain ties with the electorate back home (Heinelt & Niederhafner, 2008).

As widely known amongst interest representation groups and scholars in this same area, direct contacts to the Council of Ministers are hard to establish. The Council's main function is to represent

the national interests of the EU member states. Hence, territorial interests need to be formulated first to the domestic level in order to pass on to the European level through the national representatives in the Council. The only very limited number of strategies that do exist to address the Council of Ministers (for an overview see Lambregs 2010) are hard to apply for the lion share of interest groups. The officials working in the COREPER (Committee of Permanent Representatives) on the preparation of the ministry's position on a policy proposal are the only access points for interest representation organizations in the European sphere.

2.8.   The facilities of transnational municipal networks

Although some questions concerning governmentality and sector- and policy specific impacts remain, the significance of transnational networks as a form of governance organization has widely been documented amongst scholars of international relations (Keck & Sikkink, 1998; Newell, 2000; Betsill & Bulkeley, 2004). A TMN can be understood as a form of transnational advocacy network (TAN). Keck and Sikkink (1998, p. 89) define the latter: "A transnational advocacy network includes those actors working internationally on an issue, who are bound together by shared values, a common discourse, and dense exchanges of information and facilities". Since commitment to these networks is voluntary, internal governance of such networks lacks any kind of authority. Forms of soft regulations have been developed to govern their members, such as target setting and benchmarking.

Although the Covenant of Mayors cannot be merely conceptualized as a transnational network, its horizontal cooperation is similar to the functioning of Transnational Municipal (Advocacy) Networks (TMN). The importance of such an organisational structure lies in the ability to collect, exchange and disseminate technical knowledge, experience and information to its members (Kern, 2010). Moreover, a network forges norms about the nature and terms of particular issues, facilitates the possibilities to get a hold on financial and political resources and enhances recognition among members which on its turn provides legitimacy for norms and approaches on climate protection. Further, it enhances representation of the members' interests at distinct policy levels. Finally this policy structure is used to re-frame policy agendas and put political weight on certain coalitions in e.g. the European government (Keck & Sikkink, 1999; Betsill & Bulkeley, 2004). As Slaughter & Hale (2010, p. 48) argue, transgouvernmental networks "have emerged organically in response to the increasing complexity and transnational nature of contemporary problems". Moreover they occur in issue areas characterized by high value content and informational uncertainty, such as the area of climate change (Keck & Sikkink, 1998).

This chapter discusses the different facilities TMNs have to offer in order to understand the functioning of such a platform facilitating cooperation between cities and municipalities of member states across Europe. In order to maintain overview, an overview is provided by Table 2.

Table 2. Overview of facilities of Transnational Municipal Networks

TMN facilities	Explanation
Local capacity building	Local authorities are in need to conduct research and implement measures.
Cooperation	The nature of the issue of climate change requires a policy response on different policy levels, across borders and sectors
Information exchange	Transnational dissemination, exchange and creation of information to authorities on different levels
Policy learning	Learning on the technicality of an alternative to solve a policy problem Learning about fundamental norms of a policy problem
A policy entrepreneur	The policy entrepreneur executes normative leadership and holds the capacity to influence the fundamental understanding of a policy problem
Significance for local initiatives	Significance of local initiatives is increased by showing the aggregated effect of all local emission reductions counted together
Awareness	Awareness rising amongst the general public

Source: the author

2.8.1. Local capacity building

Support in terms of financial resources, technical, institutional and administrative capacity, is one of the key facilities transnational municipal networks have to offer (Granberg & Elander, 2007; Holgate, 2007; Romero Lankao, 2007). Local authorities need to increase their understanding of the possible local impacts of climate change and the related solutions. Therefore it is in need of additional financial resources in order to conduct costly research to assess local GHG emissions and develop baseline scenarios, and implement the necessary measures and policies. It is widely acknowledged that TMNs succeed in liberating additional resources for (Sanchez-Rodriguez *et al.*, 2005; Bulkeley, 2010; Martins & Ferreira, 2011).

2.8.2. Cooperation

As widely argued by the scientific community and expressed in the IPCC Fourth Assessment Report (AR4), the causes and effects of a global changing climate are difficult to identify. This complexity challenges (especially local) authorities to address the issue on an adequate basis (Brown, 2009; Giddens, 2009). As the nature of the problem suggests, the issue "involves multiple and intertwined sets of public and private actors and challenges that cut across interconnecting policy domains and levels of government" (Brown, 2009, p. 519). A network approach offers the opportunity for these

diverse actors ranging from governments to private stakeholders from different sectors to get together, cooperate and share knowledge and resources to strengthen their efforts to tackle a "wicked problem" as climate change. Signatories are inspired by the international experience prevailing on the issue. Hence, TMNs conduct a key role as initiator and supporter of climate change action at the local level, not only in megacities (Martins & Ferreira, 2011) but worldwide (Bulkeley *et al.*, 2009; Bulkeley & Newell, 2010). Therefore, the networks are of particular importance at the early stages of climate policy making as these local actors are usually seeking ideas from cities that share similar politics or urban characteristics (Schreurs, 2008).

2.8.3. Information exchange and policy learning

Networking and cooperating enhances the availability of know-how, best practices, expertise and experience about local climate governance to local authorities (Bulkeley, 2006).The transnational dissemination, exchange and creation of these kinds of information to governance organisations on regional, national, supranational and international level can lead to policy learning (Kern & Bulkeley, 2009). Best practices are specific initiatives that serve as experience and knowledge for other governance organisations or individuals using this information. Since municipalities in the European context increasingly face similar policy challenges, it is helpful for authorities to see how others manage certain challenges. The institutionalization of transnational policy learning enhances the development and dissemination of innovative solutions to common problems (Kern, 2001). Additionally, they play a role for the alteration of prevailing norms and values concerning environmental policy.

It is argued that policy change can occur on two different levels. In rational terms, additional information from best practices increasing the understanding of a policy process and hence provides a better, preferable technical alternative for a policy problem (Jactenfuchs, 1999; Sabatier & Jenkins-Smith, 1999; Bulkeley, 2006). A policymaker screens for ideas for policy solutions outside its own authority. He or she is particularly concerned with a fairly technical process considering the means – in terms of instruments, strategies and technologies – of policymaking (Jordans & Greenaway, 1998). This rationale assumes that in case of dissatisfaction with the current state of affairs, improved access to information and knowledge will open up trajectories to better means in obtaining the foreseen policy or organisational goals (Jactenfuchs, 1999).

The flipside of this facility is that it provides little guarantee of quality and replicability of the information available to the members of the network. Case studies and examples do not go into detail and interested readers need to further dig into the story in order to find out whether the

project is applicable in their own political context (Bulkeley, 2006). Moreover, little evidence has shown that the availability of information of best practices has led to the actual uptake of example projects. It does serve as inspiration and as a device to persuade local actors to undertake action (Kern & Bulkeley, 2009).

Bulkeley (2006) argues that a reason for the rather slow uptake of new information available to members of a network can be understood by taking into consideration the contextual circumstances, such as local structures and policy struggles. These institutional circumstances are determining for the functioning of a specific technology possibly learned from other signatories to the network. This hindrance also explains why so little institutional changes and reframed policy practices have been observed as a result of a changed discourse (Betsill & Bulkeley, 2004). Many scholars argue therefore that policy learning cannot be understood as a simple lesson-drawing from other examples of technical solutions to a policy problem (Bulkeley, 2006). On the contrary, policy makers will encounter a new understanding, concept or frame and potential solutions concerning a specific policy problem (ibid).

This contrary approach to policy learning affects the fundamental basis of policy by reframing the debate. If assumed that knowledge is socially constructed, the gathering and accession of new experiences from other governing entities – i.e. other signatories to the network – spurs new understandings and alteration of the policy debate (Ward *et al.*,2004). Ultimately the procedures, preferences and behaviour of a governance body are altered and concretized. A political space is provided functioning as a platform to discuss alternative understandings of the issue of (urban) climate change (Toly, 2008). The way in which a specific policy is framed is put on lose ground triggered by the influence of previously non-existent competitive frames (Ward *et al.*,2004). In this way, the interpretation and nature of the policy problem is challenged and reframed. The result is an argumentative struggle between the deeply entangled competing rationalities about the nature of a policy problem. The prevailing norms and hence the sense of the content of related interests regarding a certain policy problem are intersubjectively formed on the basis of a knowledge pool resulted from this transnational cooperation (Betsill & Bulkeley, 2004). Accordingly the governmental rationalities and technologies allowing the visible governability and management of public policy are questioned. The governance organisation will find itself in a search for legitimate means through which it should address future policy problems (Bulkeley, 2006). The arena of transnational city networks functions as a "means through which cognitive and normative aspects of the problem in question come to be constructed and learnt, and in turn shape the ways in which [governmental organisations] perceive their interests" (Betsill & Bulkeley, 2004, p. 473).

The concept of norms is understood as 'established practices, codes of conduct, and standards of acceptable behaviour' that reflect 'oughtness and shared moral assessment', or 'shared ideas, expectations, and beliefs about appropriate behaviour' (Finnemore & Sikkink, 1998; Ingebritsen, 2002). Which means that norms do not determine behaviour, rather constrain certain actions and by doing so define the parameters of acceptability. All actors involved in a policy debate, operate and act according to their subjective interpretation and operationalization of related norms (Finnemore & Sikkink, 1998; Hoffmann, 2007). In debates they participate in norm contestation and dynamics (Hoffmann, 2007). The actor that succeeds in defining 'particular standards of appropriateness' and hence the dominant discourse and additionally secures support for this specific approach (Hajer, 1995; Finnemore & Sikkink, 1998), is able to 'persuade a critical mass of officials (norm leaders) to embrace new norms by calling attention to or creating issues' (Finnemore & Sikkink, 1998). This normative understanding of policy learning is linked to the struggle for hegemony in defining the dominant discourse regarding a certain policy issue and additionally secure support for this specific approach (Hajer, 1995). The position in which one can define and frame a policy concept authoritatively for all members of a policy structure implies great power for the 'policy entrepreneur' (Jactenfuchs, 1999). This can possibly lead to power struggles and tension between actors from all kind of policy levels.

Some constraints are to be taken into consideration when understanding the issue of normative policy learning. The norms and position of a municipality regarding its understanding of climate change policy have to be reflected in the interests communicated to fellow signatories. Furthermore, multiple policy networks are often involved in the process of policy makers and dominant policy communities often promote business as usual (Betsill & Bulkeley, 2004).

To conclude, here it is assumed that the rational approach of policy learning sounds straightforward but fails in explaining the adaption or the lack thereof, of innovative policies. It is better to understand the shift in the fundamental norms at the basis of policy making to predict chances (Keck & Sikkink, 1999; Betsill & Bulkeley, 2004). Nevertheless in moving from a changed discourse and a different understanding of an issue, to the implementation of concrete policies and institutional arrangements reflecting these norms, some phases in the policy making process have to be taken into consideration. To achieve the desired shift, human and economic resources are indispensable. Moreover, tensions over how the issue has to be interpreted and how policies have to be formed can slow down progress.

2.8.4. Policy entrepreneur

What Toly (2008) calls 'normative leadership' is performed by the 'policy entrepreneur'. He or she frames, explains, links and translates the issue of climate change in a way that it ends up on the political agenda in a certain, specific format. By this process he or she holds the capacity to influence the understanding, framing and hence fundamental basis of a policy problem. The ability to alter the normative understanding of a certain policy issue is called 'norm entrepreneurship' and implies significant power over a policy debate. Hence this form of governance intends to influence the nature of the debate both internally and externally: inside the municipality and the network, and externally during the process of interest representation.

A 'policy entrepreneur' catalyses climate governance in local municipalities (Gore & Robinson, 2009; Bulkeley, 2010). These individual politicians or officials advocate the issue in the local municipality by setting the policy agenda, mobilizing fellow officials and by doing so establishing a firm policy basis for future policy responses. Policy entrepreneurs are supported in their effort by transnational municipal networks. These networks provide the necessary resources and political space for measures to be implemented (Bulkeley, 2010). Hence, 'policy entrepreneurs' form the connection between the local level, the transnational network and other policy networks (Mintrom, 2000; Kingdon, 2003, p. 279; Zahariadis, 2003). Although the policy entrepreneur plays an important role to launch the policy process, a firm institutionalization of climate protection requires a broader favourable institutional context (Bulkeley & Kern, 2006).

2.8.5. Highlighting local efforts

As mentioned earlier, it is widely acknowledged amongst scholars that the municipal level is the key area to monitor the energy production system (Betsill & Bulkeley, 2004). Local governments can effectively implement far-reaching measurements and policies addressing the issue of climate change. In doing so, they play a critical role in the attempt of developing and implementing an inclusive European environmental policy framework. Both the academic and political community acknowledge municipalities as important sites for the exercise of (climate) governance. Transnational climate networks act as a significant contribution in preventing local efforts to go unnoticed. The aggregated effect of actions taken by single local authorities is significant in the contribution to global climate action (Betsill & Bulkeley, 2004).

2.8.6. Awareness and symbolic value

Joining a transnational municipal network positively influences public and governmental awareness on human-induced climate change, its causes and effects (Martins & Ferreira, 2011). Since the issue is translated to the local level, the general public and local authorities get well informed and consequently the awareness grows. Finally, membership can be solely symbolic. The joining of neighbouring, similar or sister cities can convince a certain municipality to take a similar decision.

2.9. The dual character of the Covenant of Mayors

European policy making is characterized by multilevel governance. Policy making involves different levels of government involving interests of the private sphere, civil society and environmental organizations. Areas such as energy planning and climate change policies necessitate coordination of responsibilities amongst different policy levels and actors across the different policy levels in Europe. The essence of multilevel governance is summarized by Corfee-Morlot *et al.* (2009) as followed: "advancing governance of climate change across all levels of government and relevant stakeholders is crucial to avoid policy gaps between local action plans and national policy frameworks (vertical integration) and to encourage cross-scale learning between relevant departments or institutions in local and regional governments (horizontal dimension)" (Corfee-Morlot *et al.*, 2009, p. 2).

This duality of multilevel governance is neatly reflected in the set-up of the Covenant. Because of its unique characteristics "the Covenant has been portrayed by European institutions as an exceptional model of multi-level governance" (Covenant of Mayors, 2011). The formation of specialized municipal network by the EU institutions is due to the fact that numerous cities are currently facing similar policy problems as the European Union. As a response, "the creation of institutions which facilitate transnational policy learning becomes an important strategy in developing and disseminating new policy concepts" (Kern, 2001).

In this understanding, the Covenant contributes to the process of Europeanization. Norm diffusion in the area of public policy is of key importance to this dynamic. The Covenant contributes to the convergence of norms in climate and energy policy (Keck & Sikkink, 1998). This norm diffusion occurs both on the vertical and the horizontal level. As widely argued, collective or aggregated interests supported by the broad citizenry or a certain 'sector' are eagerly welcomed by European officials. It is of no surprise that city networks create tactical alliances across Europe and invest diverse resources in collective action (Greenwood, 2011). EU functionaries indirectly ask for aggregated interests and viewpoints on public policies and local governments are more than willing to provide those.

Horizontal cooperation enhances policy change in a similar direction since an increased number of local governments share the same understanding and norms on the environmental policy problem.

The context in which urban climate governance is conducted is highly shaped by governing structures and processes carried out by other authorities, at multiple levels and by distinct networks (Betsill & Bulkeley, 2006; Granberg & Elander, 2007; Monni & Raes, 2008; North, 2009; Seto *et al.*, 2010). The relations between these different levels of governance and between the different authorities determine the scope of action for a municipal authority. Especially on the issue of climate change, responses "require the organization, steering and implementation of policies and measures with the participation of multiple actors that span several sectors, not only the environmental area" (Martins & Ferreira, 2010, p. 352). Cooperation amongst different levels, both vertically and horizontally is key to coordinate a comprehensive and systemized approach.

It has become clear throughout this theoretical framework that the Covenant of mayors operates on two levels. First, local authorities gain importance in the European policy sphere and have developed and explored numerous strategies to influence the European policy makers. The Covenant enhances the vertical cooperation between the supranational and the local level. In order to mobilize and motivate local actors to help the EU built on their sustainable energy strategy, communication channels are set-up to enhance the role of local authorities in the EU decision making (see Figure 1). Second, it offers facilities similar to those of TMNs, to facilitate horizontal cooperation (see Table 2).

The empirical results of the comparative results will be presented according to this dual character. The structure consists out of three main chapters and a final rather short chapter. A first chapter, Chapter 3: Vertical cooperation focuses on the vertical dimension of the Covenant. It studies the different strategies for local interest representation and the national and regional policy context in which these local authorities operate. Next, Chapter 4: The facilities of the Covenant of Mayors, focuses on the horizontal component of the Covenant. Chapter 5: The Outcomes of the Covenant of Mayors clarifies the local impact of joining this network and whether it has stimulated local projects and initiatives. Finally, Chapter 6 provides the different future perspectives on the Covenant and the overall conclusions of the study.

Chapter 3. Vertical cooperation

This first chapter focuses on the vertical interaction between the local and supranational level. One of the main goals of the Covenant is to enhance the cooperation between these two levels. In order to provide an answer to the question on whether it has been successful, this chapter holds the following structure. First the national and regional policy framework is discussed (3.1.). This framework defines the playing field for lower level authorities by their competences and political support, necessary to work on a renewable energy system (3.2.). The second section determines the possibilities for local authorities to voice their concerns at the supranational level (3.3.). Finally, a short conclusion wraps up the main findings (3.4.).

3.1.   Governance structure

Higher level governing structures shape the landscape for lower level authorities. Local governments alone may lack the capacity to address the issue or cope with the unaivoidable impacts of climate change, as the magnitude and frequency of possible changes are becoming increasingly threathening. A strong commitment, leadership and political will from higher level authorities such as the international community, the EU institutions and the national government provide a favourable environment to work in (Füssel, 2008; Parry, Palutikof *et al.*, 2009). According to the interviewees the essential components of such a multilevel governance structure to enhance the implementation of climate change policy at local level are: an overarching strategy provided by the EU, a clear vision on the national level, a supporting role provided by the region and cooperation amongst local authorities. The role of the national and regional authorities is discussed in the following two sections. Horizontal cooperation will be addressed in the next chapter, under section 4.7. Information availability.

An overarching strategy provided by the EU is necessary to provide a framework to include policies and measures from lower level authorities. As Rasmus Bo Hansen, project coordinator at the municipality of Solrød puts it: "the EU should implement a common goal suitable for the whole EU" (Hansen, 2012). By doing so, authorities of different policy levels find themselves aiming at similar goals which facilitates cooperation amongst them. In case that goal is missing, the discrepancy between authorities becomes restrictive for mutual advancement and knowledge exchange. Hansen states: "the national Danish emission reduction target is more ambitious than the EU target" (Hansen, 2012). Dissimilarity in advancement of the different member states possibly leads to doubt

in the municipal institutions on whether the development of a sustainable energy strategy is worth the investment.

3.1.1. The national level

Pressure on the municipalities originating at the EU level definitely enhances local action. However, the EU level has no say over the municipal level. The national authorities do. Regulations from the national level forces different actors in society to alter their behaviour. The obligation from higher up backs up the local authority in their quest to mobilize different sectors and actors in the municipality and provides an incentive for the local authorities to undertake action (Gustavsson *et al*., 2009; Qi *et al*., 2008; Rasmussen, 2012). The opposite is also true. The absence of a clear vision on national level can result in a policy vacuum providing the space for municipalities to venture (Bulkeley, 2010). Hence, local authorities' possibilities strongly depend on the position of the national authorities.

The Danish National Government

The Danish national government works on adequate energy policy. The national authorities have committed themselves to rule out the use of fossil fuels by 2050. The use of fossil fuels for heating is phased out starting from 2018 onwards. "Starting from next year municipalities are not allowed anymore to put up new oil installations and from 2021, one is not allowed to repair the existing installations" explains Rasmus Bo Hansen, project coordinator at Solrød Municipality (Hansen, 2012). This regulation increases the pressure on households and the private sector to look for alternatives, such as district heating on biomass which is promoted by the municipality. By doing so, inhabitants feel the need to move to a more sustainable energy system which reflects in support for the municipality's renewable energy projects. As Hansen puts it: "A push from the top helps us to convince the population" (Hansen, 2012) leading to a positive effect. Furthermore, the national authorities have increased the quota of wind energy to 50% of all electricity production in the country (Hansen, 2012), and set a long-term goal of a 100% renewable energy system is (Rasmussen, 2012). The advantage of a progressive national government has also become eminent. In the municipality of Solrød, the payback time for the planned biomass plant has been halved from 10 to 5 years.

The positive impact of a progressive, national policy context is understood by the majority of municipalities. The local authorities argue that they lack competences in areas such as energy and heating, regarded as key focus for cost-efficient emission reduction. Both the local and regional level had more competences in the past, before the national structural reform occurred. As a result, both the regional authority and the municipalities are seriously re-evaluating the division of competences

between the levels of authority. This debate has been re-opened in the energy debate (Rasmussen, 2012). The national level is also of importance to provide financial resources. The Danish municipalities argue that they do not possess the financial resources to invest in ground breaking projects. Investments will only occur when the payback time is bearable and profit is secured. Therefore, the national government is of importance to liberate resources for investment and to push the private sector to launch efforts. A long term perspective given by the European, national and local authorities therefore increases certitude for investors.

As a result of this lacking competences and resources, local authorities across the country push the national government to continue to launch progressive policies (Hansen, 2012). This bottom-up pressure has been deliberated upon in literature. According to Hodson and Marvin (2009) local level authorities have taken a more political stance and seek the positioning of urban regions as key-sites for addressing the issue of climate change. Clearly formed interests are developed and drive the national level to reconsider the importance of urban governance on the issue, by relocating competences, reorganizing powers or developing a policy context fit for local efforts (Hodson & Marvin, 2009).

The Spanish National Government

The Barcelonan municipalities indicate the positive impact of pressure from higher up. A response to the issue of climate change requires a global approach. A comprehensive, overarching strategy of the EU is therefore a first start. Following is the Spanish national government, which finds its decision making on renewable energy policy currently in a political lock-in. The national authorities are working on a law (Real Decreto 1/2012) that possibly eliminates the feed-in tariff from renewable energy installations. This is regarded amongst the municipalities as a serious restrain for future investments in renewable energy projects. The Royal Decree issues the concept of 'autoconsumo' indicating that energy installations should be closely adjusted to the specific energy need of the installer. It cuts the possible profits from selling the surplus and unused electricity from an installation to the grid. Such a decision limits the incentives for long term investments, is detrimental for the payback time and increases the financial burden (Bernet, 2012). As a result, Domenec Cucurull, environmental service manager of the Deputation of Barcelona is not sure whether "the current ELENA budget [European Local ENergy Assistance, a budget provided by the European Investment Bank] can cover all the foreseen expenses" (Cucurull, 2012). Furthermore, the lock-in deteriorates the investment climate since a final decision is permanently postponed. Cucurull explains the impact on the possible investors: "The investors are waiting for the verdict of this law to see whether their investments are still profitable" (Cucurull, 2012). Marta Morera Marce, councillor

on economic city planning of the municipality of Rubí, argues that RD 1/2012 and its likely implementation is due to large private energy producers that control the market. Feed-in tariffs mean a reduced market share for the energy sector and hence, "if this law is passed by the national government, it is clear that this is according to the interests of these companies" dixit Morera Marce (Morera Marce, 2012).

Marc Cadevall Artigues criticises the overall lack of political will amongst the Spanish politicians. He argues that from the total national spending on energy, 85% is paid for energy coming from outside the country. Decisions regarding this issue are still taken on a day to day basis and without a long term perspective. Politicians do not dare to invest in a different, sustainable energy system because the profit of such investments will not be seen in the four years that they will occupy a certain seat in the government (Cadevall Artigues, 2012).

3.1.2. The regional level

In Zealand cooperation and coordination is seen as essential in developing an efficient renewable energy system. Such a system requires a shift from centralised to decentralised energy productions. It should be based on a variety of energy sources to be self-containing and guarantee security of supply. To fully grasp the energy sources available, installations are planned on a large scale. The supranational decision making bodies are the preferable platform to coordinate this planning. Such an approach enhances the construction of installations on the most cost-efficient locations across Europe. In this planning, the three main renewable energy sources are included. In practical terms, this means concretely that wind farms are installed on windy locations and solar farms on sunny locations. The suitable location for renewable energy production sites does not always coincide with the places of demand or the locations of critical GHG-reduction. The produced energy is therefore distributed by a central grid, accessible by all Member States.

The regional authority is regarded as an essential actor to concretise a European approach in a regional context and to coordinate local efforts (Castanyer, 2012). The Covenant focuses on reduction targets set forth by local authorities. An unintended side-effect is missing the goal of overall emission reductions, since administrations are focussing on how to reach these reductions inside their own municipal borders. As a result, authorities will be competing instead of cooperating amongst each other. Maximization of emission reductions in the municipal borders can work inversely to the overall regional, national and European goal of minimizing the global ecological footprint (Niebuhr, 2012). The main function of the regional authority is to coordinate and facilitate local initiatives (Hansen, 2012; Rasmussen, 2012) with a view on overall regional, national, European

and global GHG emission reduction. This function is backed up by the EU, the regional authority's political clout in enforcing regulations becomes much bigger (Castanyer, 2012). The need for a climate governing approach that looks beyond the own estate and focuses on implementation of measures in the broader community has been shared by several scholars (Bulkeley & Kern, 2006; Betsill & Bulkeley, 2007; Gore & Robinson, 2009).

Signing up to the Covenant has speeded up the process of regional strategic planning. In cooperation with the University of Roskilde, the region has mapped the available renewable energy resources in the region. This research has focused on wind-, solar- and biomass energy. Rasmus Bo Hansen, project coordinator at Solrød Municipality expresses it as follows: "A general overview on a regional scale of the origin of GHGs, the use of energy and the possible production of renewable energy provides a solution for all the municipalities" (Hansen, 2012).

Not every municipality in the province of Barcelona is equally optimistic. Marc Cadevall Artigues, Head of Technical Services of Environment and Sustainability of Terrassa, puts the role of local authorities in solving this global problem into perspective: "in case we – and all the municipalities of Europe together – succeed in significantly reducing emissions, this would still contribute very little" (Cadevall Artigues, 2012). A similar, but less extreme vision is also heard across Zealand's municipalities. Although a regional vision and strategy on a sustainable energy system is indispensable, "the municipalities themselves can best decide on local energy opportunities" says Rasmus Bo Hansen (Hansen, 2012). The challenge is to combine these two levels. The interests of the regional and municipal level often differ from each other in a sense that the municipality aims at maximizing energy efficiency and renewable energy production inside its borders to reach its reduction goals set forth in the SEAP. The region however attempts to develop policies based on efficient investments on a regional basis. Consequently cooperation is attributed a key-role. In order for interaction to take place, a framework therefore should be implemented and the local authorities need to speak the same language (Hansen, 2012).

The Covenant provides a platform where officials and politicians from different policy levels can meet to enhance mutual understanding and strengthen commitments in order to push for better policies. Authorities on the local level focus on local economic development and the improvement of the living conditions of their citizens. The proximity to the citizens has inspired the European institutions to address the local authorities directly to bypass national governments and hence complex decision making structures.

3.2. Empowerment of the local level

One of the main goals set forth by the Covenant is the empowerment of the local level and enhanced vertical interaction between the local level authorities and the supranational level. Municipal authorities are responsible for enacting policies of crucial importance to combat climate change. Involving these bodies in the European decision making process would facilitate the development of a comprehensive climate and energy approach, across Europe on all policy levels. Both the European Institution and the local authorities see the advantages of establishing direct relations to incorporate local interests in European policy making. Hence municipalities will feel involved and part of a broader, more significant system of European climate governance. It facilitates implementation of policies originating at European level and deepens the acceptance amongst the broad citizenry.

The literature (see Figure 1) has set out the possible strategies for local territorial interests to be incorporated in the policy making process. On the one hand, the consultative mode, in which voices in society are listened to on an ad-hoc basis, holds three possible strategies: secondment, transnational communication platforms such as TMNs, and direct interest representation. On the other hand, the deliberative communication mode provides only one option; the representation of territorial interests by institutionalized interaction. Representatives are permanently consulted during policy making processes.

In case of the Covenant, the consultation of local territorial interests initiates at the European level. Since the European Commission focuses unmistakable on a stronger systematic dialogue between representatives of local territorial authorities, the broad citizenry and the EU institutions through national and European associations, it is assumed that mainly the system of the deliberative communication mode applies here. Nevertheless, the interviewees are questioned about all possible channels and strategies applied to enhance the interaction between them and the European institutions as a result of joining the Covenant.

3.3. Poor local-subnational interaction

Although the Covenant clearly intends to incorporate the local level authorities into the process of decision making, no single respondent feels its voice heard on the supranational level. Similar to all other directives and regulations coming from the European Commission, the Covenant is seen as a unidirectional regulation, originating at the European institutions directed top-down to the municipal level. Ramon Xandri, secretary of the municipalities of Avià and Castellar del Riu, puts it very straightforward: "We just do as being told" (Xandri, 2012).

The need amongst the municipalities of Barcelona for representation is not pressing. The Deputation of Barcelona is seen as the representative of the region voicing aggregated interests of all the municipalities in the province to the institutions higher up. Francesc Bernet, head of department on environment and sustainability of the municipality of Santa Coloma de Gramenet indicates that there is no need from the local level to represent their own interests: "I see the Deputation as the representative of our municipality on the European level" (Bernet, 2012). Teresa Martinez Barchino, head of the environmental department of Santa Perpètua de Mogoda, holds a similar vision: "it is the Deputation that has contact with Brussels and communicates the experiences of the local municipalities" (Martinez Barchino, 2012). The Deputation coordinates the communication and if necessary invites representatives of the municipalities to join conferences (Martinez Barchino, 2012). It is this authority that utters a point of critique to the European policymakers. According to Domenec Cucurull, environmental service manager of the Deputation of Barcelona, the policymakers at European level are not considering the difficult contextual factors that the municipalities in Barcelona are dealing with. As Cucurull articulates: "[…] Brussels is just too far from the actual European citizens that live in the small municipalities in the different member states" (Cucurull, 2012).

The Danish municipalities neither feel involved in the process of European policy making. The main reason is a lack of incentive for the local authorities to invest in interest representation on the supranational level. Not because they have not been approached by any of the European institution let alone European policymaker, but because authorities simply do not seek participation nor put any effort in strengthening the band with the supranational level. "There is simply no interest from the local authorities to attend e.g. the Covenant meetings" says Thomas Niebuhr, administration officer for Climate & Sustainability of the municipality of Roskilde (Niebuhr, 2012). Though, numerous efforts of the CoMO have been launched to stimulate authorities to highlight local initiatives and projects by means of a newsletter and mailing lists send out to all the signatories of the network. None of the municipalities have promoted local initiatives or engaged in the process of interest representation since they do not conceive themselves as pioneers or front runners on the topic. Additionally, Margit Lund climate coordinator at the municipality of Næstved, mentions that neither does any representative of the European institutions has shown interest in the local vision of her municipality (Lund, 2012). Finally, the same counts for the regional level. The regional authority's efforts in voicing local interests at the supranational level have been limited to the already existing institutionalized connections with the CoMO and the permanent regional representative in Brussels. Nevertheless, this has not been seen as a shortcoming of the Covenant or the European Institutions (Jensen, 2012).

3.4.   Conclusion

It has become eminent in the last section of this chapter that vertical interaction has not been stimulated by joining the Covenant. The municipalities of both regions indicate that the regional authority functions as the representative of the local interests. There is no need for the local authorities to step up to the supranational level to voice their concerns. Moreover, the necessity of a favourable national and regional context is often repeated. Progressive policies from higher level authorities offer a motivation tool for municipalities implementing measures and projects. It offers both a legal framework for local authorities to fit their policies in, and political backing to broaden support amongst private investors, the public administration and the broad citizenry. The difference in the policy context between municipalities in the region of Zealand and the province of Barcelona become clear in this chapter. The national and regional authorities of respectively Denmark and Zealand have a history of implementing progressive climate and energy policies. This has led to a favourable framework for local authorities to develop similar policies and strategies. On the contrary, the national government of Spain has developed and enacted policies negatively influencing the investment climate for renewable energy projects. To conclude, the policy context shaped by higher level authorities determines the municipality's room for maneuver.

Chapter 4. The facilities of the Covenant of Mayors

This second chapter focuses on the network facilities. As discussed in the previous section, the Theoretical Framework, a TMN has numerous facilities to offer to its members (see Table 2). The Covenant is assumed to do so in a similar way. This chapter describes the facilities offered to the local authorities in the province of Barcelona and the Region of Zealand. Joining the Covenant has resulted in changes in local governance processes and structures. Every single characteristic of this process highlighted by the respondents of this case-study is addresses. These characteristics are: the effect of a voluntary network (4.1.), the role of the regional authority in local capacity building (4.2.), the key role of a policy entrepreneur (4.3.), a change in how the debate of climate change is framed (4.4.), developing insights in local energy use (4.5.), the set-up of a long term strategy (4.6.), the increase in availability of information (4.7.), and a review of the indicators and methodology in calculating the impact of the energy system (4.8.). Discussed under separate headings are the findings for both regions and its local authorities. A conclusion at the end of the chapter (4.9.) includes a table (Table 3) listing the different facilities and the use thereof by the researched municipalities.

4.1. Voluntary network

When studying the characteristics of the Covenant one should not forget that joining is voluntary. No signatory is obliged by neighbouring municipalities, the regional authority or by European law to join the network. The opinions regarding the advantages of a voluntary network are divided. Some municipalities argue that a voluntary network will not contribute to actual GHG emission reductions in the municipalities and the network only has a symbolic function. The representative of Terrassa sees "no advantages, everything we do is a compromise" (Cadevall Artigues, 2012). Others emphasize the influence of the Covenant because of its broad scope and support amongst European local authorities. The Danish municipalities all agree on the fact that measures and policies get more legally embedded because of the Covenant. The obligations become increasingly binding for the local authorities, despite the existence of any law. This strength is attributed to the voluntary character of the network. By doing so, the efforts become imbedded in the political vision instead of being understood as another obligation from higher up. Signing the Covenant and developing the SEAP is a "way to stay focussed [...] and keep the issue of climate change and energy on the political agenda" says Niels Philip Jensen, environmental administrator of the municipality of Ringsted (Jensen, 2012).

According to Thomas Niebuhr, administration officer for Climate & Sustainability of the municipality of Roskilde, if the initiative was an obligatory EU law or regulation it would not have mobilized so many local authorities (Niebuhr, 2012).

4.2.   Local capacity building by the regional authority

Support in terms of financial resources, technical, institutional and administrative capacity, is one of the key facilities transnational municipal networks have to offer (Granberg & Elander, 2007; Holgate, 2007; Romero Lankao, 2007). The Covenant has enhanced local capacity building and has ascribed the key-role of channelling support, to the regional authority.

In both provinces, Barcelona and Zealand, the regional governments have played a key influential role. Both regions are represented in Brussels and maintain contact with the European institutions. From the moment the initiative of the Covenant was launched by the Commission in 2008, the regions have assembled the municipalities of their territory and convinced them to sign the Covenant. Bjarne Rasmussen, coordinator of sustainable Region of Zealand explains: "the region has facilitated the process of signing the Covenant for the municipalities" (Rasmussen, 2012). To institutionalize support from the regions, both authorities have signed an agreement with the Covenant of Mayors Office (CoMO) and have become so called "supporting structures". They function as the regional coordinators for local support. In order to understand the role of the regional authority, one should have a look at the broader political context. This section explains the overall role of the regional authorities in both provinces before addressing the influence it had in signing the Covenant and its more specific types of support.

4.2.1.   The region of Zealand

The region of Zealand has always been characterized as quite ambitious regarding topics such as climate change and renewable energy. The role of the city of Copenhagen cannot be neglected. The capital has set forth a goal to become carbon neutral by 2025. Although many doubt the viability thereof, this positive attitude of the capital affects the awareness and willingness of its surrounding municipalities (Hansen, 2012). Another window of opportunity has been the UNFCCC's COP 15 in Copenhagen that triggered awareness inside the local authorities of Zealand (Pedersen, 2012). The event called for contribution of the municipalities (Rasmussen, 2012).

The municipalities of the region in cooperation with the regional authority have set up an agreement in 2008 amongst themselves to develop a regional Climate Action Plan (CAP). The idea of a 20% reduction target has been launched during a meeting between the municipalities looking back at the

negotiations on the regional sustainability strategy of 2007. The local authorities had proposed the development of such a climate strategy themselves, using the association of municipalities as a platform to launch the initiative. As a group they have asked the region to function as a coordinator (Hansen, 2012). The region – pushed by numerous local authorities, like Lolland – was easily convinced and promised to provide support. "[…] (the region) told the municipalities not to worry about the workload […] and set up a steering committee and a work group with representatives of the different municipalities" confirms Bjarne Rasmussen, coordinator of sustainable Region of Zealand (Rasmussen, 2012). The municipality of Sorø has acknowledged and appreciated this move from the regional authority to take away as much barriers as possible (Hansen, 2012). Consequently, the region tried to involve lacking and doubting municipalities into the debate. In the process of developing this strategy, several options, measures, policies and policy instruments have been discussed, inter alia the Covenant of Mayors.

At the same time in the spring of 2009, the discussion rose on whether the Covenant of Mayors should limit its membership to bigger cities or include a broad range of smaller sized municipalities. The debate became eminent in, amongst others, the regional council of the EU. The interaction between the regional council in Brussels and the representative of the region of Zealand has been strong. A key figure in the regional council in Brussels was the mayor of Næstved which launched the idea of local relevance of the network. As a mayor of one of the municipalities in the region, he brought the topic of the Covenant to discussion in the association of municipalities on climate change topics the Klimakommuner[1] (Rasmussen, 2012). In this gathering, the municipalities of the region of Zealand agreed to join the Covenant. The need for regional cooperation and the development of a sustainable energy system on a regional and local level coincided neatly with the facilities offered by the Covenant (Lund, 2012). Rasmussen explains why; "basically because it is realistic, it provides a simple methodology for setting up a strategy, developing a baseline scenario and most importantly it involves the political decision making level" (Rasmussen, 2012). On request of the municipalities, the region provided coordination and performed a number of administrative tasks to facilitate the process of joining. The regional authority kept contact with their Brussels office and prepared the paperwork on the political decision. Concluding, the process of joining was based on a mutual convincing and pushing of the municipalities and the regional office.

Subsequently, the next phase has been to figure out what the consequences of joining would look like. Most importantly, the municipalities were mostly concerned with the financial implications,

---

[1] The KlimaKommuner is launched by the Danish society for nature conservation (Danmarks Naturfredningsforening) and the majority of Danish municipalities have joined. Every member municipality is assumed to set a CO_2 reduction target of 2% per year (Naturfredningsforening , 2012).

such as the need for additional resources, new investments, hiring auditors and opening up a climate coordinator position. Before signing some municipalities had to find and liberate additional resources to ensure the reaching of their goals.

Technical Support

In the process of joining the Covenant, technical support was provided by a cooperation set-up between the regional authority, the municipalities and the University of Roskilde. Inside the university; "Professor Tyge Kjaer and Master Student Tue Damsø have been very closely involved in the provincial organisation of the Covenant and related climate issues" says Rasmus Bo Hansen, project coordinator at Solrød Municipality (Hansen, 2012). Together with the regional authorities, the university has set up a training programme for the technicians of the municipalities responsible for the development of the SEAP (Jensen, 2012). The two scholars of the university have translated the requirements for the SEAP into understandable language. Bjarne Rasmussen, coordinator of sustainable Region of Zealand adds: "so they (the municipalities) could develop a baseline and a realistic action plan" (Rasmussen, 2012). The programme was a six module training course in which the university involved experts on calculating GHGs. The lectures aimed at translating the requirements and the methodology of the SEAP in a comprehensible language applied in the Danish context. The university explained the municipalities the principles on how to develop the SEAP and gave guidelines on how to calculate the emissions from different energy sources (Jensen, 2012). The university made sure the progress of the municipalities was tracked, so immediate feedback was available to enhance regional planning of sustainable energy installations. All the Danish signatories acknowledge that it has been a tremendous effort of these institutions and a great help to the municipalities (Niebuhr, 2012; Rasmussen, 2012).

The mutual eagerness from both the regional and local authorities to bring the regional climate strategy to a successful end has been seen as an "extraordinary position" (Rasmussen, 2012). One can understand it as a fellowship which up till today strengthens the bond between the different authorities and facilitates cooperation. Currently, the authorities still work together on their regional CAP and the local SEAPs. Margit Lund, climate coordinator at the municipality of Næstved, assumes that: "many of them (of the local authorities) would not have joined if we did not do it all together" (Lund, 2012).

Financial Support

Cooperation between these authorities and the supporting role of the region has made it possible for the municipalities of the province to apply for financial support from ELENA. Although amongst the

selection criteria, there is nowhere stated that support from ELENA can only be accredited to regions or cooperation of municipalities, group efforts do make acceptance more probable (EIB, 2012). Combining the financial and human resources of the different municipalities together increases the chance of living up to these expectations. The region has informed the municipalities about the ELENA project and got them all together to apply for this financial support (Jensen, 2012). Margit Lund, climate coordinator at the municipality of Næstved, affirms this facilitating approach: "It has only been possible because of the Covenant of Mayors. Because of this network we [all the local signatories] have worked together and applied for support at the same time" (Lund, 2012). In the case of Zealand, the ELENA project has provided the municipalities with part of a budget of 500 million euros dedicated to increase energy efficiency of municipal buildings in European municipalities (Lund, 2012).

The regional authority promised to focus its business development fund increasingly on the climate topic. For the moment a significant share of this fund is spend on energy production by the use of biomass. In October a new fund set-up in cooperation between the region and the EU will liberate an additional 2-3 million euros in order to help developing more precise institutional structures and to conduct feasibility studies on the local level. These efforts will result in business models that would make investments more likely and indicate how to move from the goals set forth in the SEAP to actual implementation. In order to ensure coordinated action amongst the municipalities financed by this fund, six institutions have been involved each which; the agricultural centre, the university of Roskilde, the energy cluster centre and many others (Rasmussen, 2012).

Because of the Covenant, the municipalities do see the different possibilities for support more clearly. Therefore they seek more financial resources at different levels, also outside their own administration (Lund, 2012). However, the number of municipalities that have applied for additional resources – on top of the support provided by the region – is limited. The municipalities of Sorø and Solrød have asked for support from the IEE (Intelligent Energy Europe). In the case of Sorø however, the application has been denied.

Political Support

The region also has also provided political support for the initiative of the Covenant. As Bjarne Rasmussen, coordinator of sustainable Region of Zealand explains: "I went talking with politicians to explain them what the Covenant is exactly" (Rasmussen, 2012). This has not been an easy task regarding the declining political role of the region of Zealand in the province. At the moment they are struggling to find their current role in the energy and climate debate, since little competences

regarding these areas are attributed to the regional authority (Hansen, 2012). The actual power to implement related policies is situated at the level of the municipality and the national level. Additionally, the responsibilities of fulfilling the obligations set out in the Covenant are those of the local administrations, such as the task of developing the SEAP. If these authorities decide not to fulfil their obligation, the region has no influential power (Hansen, 2012). Concluding, the region is only entitled to facilitate cooperation (Hansen, 2012; Niebuhr, 2012).

4.2.2. The deputation of Barcelona

On the contrary, in the province of Barcelona little political attention is given to the area of climate change and renewable energy. Nonetheless, a global sustainability view and an understanding of the importance of sustainable production and use of energy, is shared amongst officials in the region and the local authorities. Domenec Cucurull, environmental service manager of the Deputation of Barcelona argues that sustainable management and use of natural resources is of critical importance, especially because of the significant dependency of the region on imports. Cucurull concludes the general picture is quite an attractive one: "One invests in a sustainable way of working, saves energy and hence expenditure, and finally will end up with a more efficient way of using resources" (Cucurull, 2012). Although investment in cost saving measures is crucial in times of crisis, the municipalities are occupied with more eminent problems like unemployment and poverty reduction.

The two main influential actors for the municipalities to join have been the Deputation of Barcelona and a local sustainability network called 'Xarxasost' – Xarxa de Ciutats i Pobles cap a la Sostenibilitat (Network of Cities and Villages towards Sustainability). The two have cooperated and suggested adherence to the network (Murie, 2012). Xarxasost assembled a number of municipalities in the province and made it possible for all the municipalities to join together, which has clarified the possible meaning of the Covenant (Bernet, 2012; Xandri, 2012). Furthermore, the Deputation played an indispensable role in joining the Covenant. As Frasesc Bernet, head of department on environment and sustainability of the municipality of Santa Coloma de Gramenet notes: "[…] I see the role of the Deputation as a tutor of the initiative" (Bernet, 2012). In case all municipalities of the region joined the Covenant, the regional authority is enabled to speak in name of the whole province when making a claim on the matter of climate change or energy (Martinez Barchino, 2012). This is one of the clear advantages explaining the pressure of the regional authority upon municipalities to join. Another is possible economic profits when investing in renewable energy and energy savings. A region wide joining of the municipalities facilitates a possible investment. The Deputation of Barcelona – in cooperation with the EIB – has conducted an ex-ante evaluation of the possible economic impact of investing in renewable energy and energy efficiency in the region. This study

showed that a possible investment would result in a positive outcome with a potential profit of 3.000 million euros. Although by the time of signing the Covenant and applying for ELENA funding, these decisions were beneficial, current financial times are less prosperous because of a sudden occurrence of the financial crisis (Cucurull, 2012).

The majority of the municipalities in Barcelona note that the advantages of joining were not clear from the beginning, nor were any discouraging disadvantages perceived. However, the mere fact that the Deputation asked them has convinced many municipalities. This institution enjoys respect from the local authorities. As Sant Quirze del Vallès notes: "since the province has taken a positive stance towards the Covenant and its goals, the municipalities have taken a similar position and signed" (Castanyer, 2012).

The regional authority has built on its persuasion power by providing technical, physical and financial support for the municipalities to inter alia, develop a Sustainable Energy Action Plan (SEAP) (Murie, 2012). The support from the Deputation has been seen as indispensable and fundamental in the process of signing the Covenant and developing the SEAP. Backing of the regional authority is of special interest to smaller municipalities in the surrounding. Unlike cities with a magnitude of Barcelona, Badalona or Hospitallet that dispose over a powerful administration with a number of relevant experts and technicians, smaller municipalities such as Avià, or Santa Perpètua de Mogoda find themselves lacking institutional and financial capacity (Cucurull, 2012). As Santa Perpètua de Mogoda has responded the Deputation on their request to join: "We will be the first to sign, but we won't have enough resources, so we need your help" (Martinez Barchino, 2012). The municipality of Rubí holds the same view. The goal to reach the 20% reduction by performing the actions listed in their SEAP could only be achieved with European support (Morera Marce, 2012).

Technical Support

Right after signing the Covenant, different supporting structures have been set up (Bernet, 2012). The regional authority has provided technical support for its municipalities. As Guimel Castanyer, environmental technician of Sant Quirze del Vallès, notes: "the Deputation offers its personnel to help the municipalities with the development of their SEAPs" (Castanyer, 2012). In this process and its key aspect – the baseline emission inventory – the municipalities were assigned an audit firm, paid for by the Deputacion (Bernet, 2012; Cucurull, 2012; Xandri, 2012;). These experts assisted in analysing the municipality's energy use and setting out a local energy strategy (Bernet, 2012). In the first place, the Deputation collects valuable data on energy consumption from the municipalities in the region. The necessary data could easily be retrieved through the different service companies. As

a result the workload for the municipalities would be significantly reduced. Nevertheless he also argues that without political will, the situation will remain immobile (Cucurull, 2012). The region also has helped a number of municipalities with the concrete set-up of certain projects. In Manresa 16 solar panel installations have been constructed in close cooperation with the regional authority.

Financial Support

Financial support from the region is made available to set up local projects. The financial resources that are liberated by the Deputation in order to support the municipalities originate at European institutes such as the European Investment Bank through ELENA (Serracanta, 2012). The Deputation functions as the receptor of financial support from EU structures, and redirects it to the municipalities in need. A common project amongst the municipalities that has been accredited with financial aid from the region was the public illumination project (see Chapter 5: The outcome of the Covenant of Mayors). These resources are also used for investments by the private sector in e.g. the promotion of biomass.

The responsibility of initiating a specific project remains of the municipality. Therefore political will remains a critical factor in the local authority's organisation. Hence "[…] the municipality itself needs to show that they are willing to pay the lion share of the investment, than the Deputation or the 'generalitat de Catalunya' is willing to help" dixit Guimel Castanyer, environmental technician of Sant Quirze del Vallès (Castanyer, 2012). Although the social and environmental viability of renewable energy projects is certain, the economic viability remains often questionable. In case a municipality wants to invest, it needs to find a public procurement that is profitable. The region cannot permit to invest without the security of profit or at least a similar economic return (Cucurull, 2012). The same counts for the municipality. In case a local authority decides to invest in a project for the municipal sector, the authority has to liberate own resources for the initial investment. In times of crisis, that is very difficult (Pol Gili & Soldevilla i Garcia, 2012). And finally, the same counts for contractors. The private sector will only invest in projects with a positive economic outcome. These stumbling blocks explain the lack of investments in the renewable energy (Cadevall Artigues, 2012).

Till today, the regional authority has invested 20 million euro in the 140 local authorities that have developed a SEAP, for the set-up of local projects. Domenec Cucurull, environmental service manager of the Deputation of Barcelona mentions that this part of the fund is only the beginning and "there is a base for investment of 80 million euro for energy related issues" (Cucurull, 2012). The financial mechanism funded by European financial resources has failed to reach the local authorities. The representatives of Rubí and Barcelona note that the Deputation converted the funding from the

EIB into a financial product which is currently managed by two local banks: Catalunya caixa and La caixa (Morera Marce, 2012; Pol Gili & Soldevilla i Garcia, 2012). Support has been intended by the European financial instituions as a system of grants and subsidies. However, "these banks that now control the budgets haven't released anything up till now" explains Morera Marce councillor on economic city planning of the municipality of Rubí, "our municipality has tried more than once in meetings to highlight our need for financial support since we are implementing a range of projects, but they haven't provided us with anything" (Morera Marce, 2012). Gerard Pol Gili and Irma Soldevilla i Garcia, project engineers at Barcelona's Energy Agency acknowledge the difficulty to obtain financial support from the banks: "the projects receiving financial resources from the bank have to consider large investments" (Pol Gili & Soldevilla i Garcia, 2012). In the region's defence, Cucurull argues that the budget these two latter municipalities are talking about is additional funding. Because of the financial situation in the country, the authorities have adopted a strategy to counter the current deficit and launch budget cuts. Since these measures also affect the financial sector, banks are cautious in providing loans for new projects (Cucurull, 2012). Irma Soldevilla I Garcia, project engineer at Barcelona's Energy Agency concludes that the Deputation has indeed put a lot of effort in providing these financial products to the municipalities. However, as a result, the final products offered by the banks, are similar to what was already available. Therefore it is not an attractive additional option compared to other financial products (Pol Gili & Soldevilla i Garcia, 2012).

Not all respondents in Barcelona have made use of the support provided by the regional authority. Rubí argues that obtaining financial support from the regional authority is rather difficult. Therefore, the municipality has sent an application directly to the EIB for support of a local project that incorporates several local industrial sectors (Morera Marce, 2012). The municipality of Santa Perpètua de Mogoda argues that applying for European funding for a certain investment or project is more effective when applying as a group or network of municipalities (Martinez Barchino, 2012). The city of Barcelona has liberated and directed a certain budget to the Barcelona Energy Agency (BEA) responsible for the development of a local action plan combining both combatting climate change and improving local air quality. Simultaneously solving both problems is quite a challenge since reducing local contaminants can possibly increase GHG emissions (Pol Gili & Soldevilla i Garcia, 2012). Neither did the city of Barcelona apply for support from the European institutions since a primary investment is necessary before one can apply for support. Since "the range of projects has still not been implemented. […] When we are about to start these projects we will search for support in the different financial mechanisms" says Soldevilla i Garcia, project engineer at Barcelona's Energy Agency (Pol Gili & Soldevilla i Garcia, 2012).

4.3. The policy entrepreneur

The decision on signing the Covenant has been taken based on unanimity, since it influences the whole municipality (Bernet, 2012; Morera Marce, 2012). Nevertheless a policy entrepreneur pushes the rest of the local authority to support the decision. Individual officials or politicians advocating the issue of climate change in the municipal sphere have been of key importance in the emergence of municipal climate governance. These policy entrepreneurs provide a basis for policy responses by mobilizing fellow politicians and officials, by cooperating with neighbouring municipalities and by trying to influence the political agenda. Although the generation of a broader institutional context is necessary for climate protection in the long run, these individuals play a key-role in getting the policy process started (Gore & Robinson, 2009; Bulkeley, 2010).

The Covenant plays a crucial role in highlighting and facilitating the work of the 'policy entrepreneur'. In some municipalities an important politician like the mayor has taken the lead in the debate around the Covenant. In case of Solrød the current mayor Niels Horup (Venstre, the Danish Liberal Party) carries on the sustainable energy strategy initiated by the former major Merete Wiid (Venstre) (Danske Kommuner, 2012; Hansen, 2012). In case of Roskilde, the municipal director (head of the administrative organisation of the city) – Henrik Kolind – was one of the three climate ceo's active in the COP15. Kolind has also been involved in the development of the regional climate change strategy of the region. A similar situation can be found in Næstved. The mayor saw clear advantages of a local approach of energy and climate issues. Furthermore, he was strongly involved in the decision making process of EU's climate and energy package (Lund, 2012). In other Danish municipalities, the actor of 'policy entrepreneur' has been institutionalized. A separate department is responsible for the implementation of a local climate strategy in the scope of agenda 21. The entity is constantly occupied with awareness rising and developing efficient and renewable energy programs.

Additionally, two external bodies have acted as policy entrepreneurs persuading local authorities to join the Covenant. The already existing local sustainability networks assemble all local authorities and convince them to join together clarifying the possible advantages of the Covenant (Bernet, 2012; Xandri, 2012). In case of the province of Barcelona this is 'Xarxasost' – Xarxa de Ciutats i Pobles cap a la Sostenibilitat (Network of Cities and Villages towards Sustainability). Zealand's counterpart representing all the municipalities in the region is the 'Klimakommuner'. The regional authority has persuaded the municipalities in the province to join. In the case of the province of Barcelona the municipalities indicate that they have joined, mainly because the Deputation asked them to. This has been the most important and in several cases the only reason. This explains the absent of local 'policy entrepreneurs' in the Barcelonan municipalities. The role of the regional authority becomes

more eminent knowing that none of the municipalities of the province of Barcelona has made an ex-ante evaluation before joining. The advantages of signing were not clear or not existing for the local authorities. In the case of the region of Zealand, the regional authority has also played a convincing role. The support and coordination promised by the region was a decisive factor. The initial motivation to join originated at the local level, amongst the municipalities. Important external actors that according to the respondents have not played a significant role in the process of signing the Covenant have been the EU institutions (Xandri, 2012).

4.4. Framing of local climate governance

This section explains the stance of the different municipalities in the two provinces on the topic of climate change and renewable energy. The majority of Zealand's signatories were already working on the topic for some time before signing the Covenant. The Barcelonan authorities have less experience with these kinds of policies. This section provides an insight in the local context and the ways that the issue of climate change and sustainable energy is framed by the Covenant which intentionally enhances local climate governance.

Overall, the local authorities agree on the European multilevel governance approach by incorporating municipalities to achieve their overall emission reduction targets. As Terrassa notes the importance of adding up all the small efforts from villages, towns and cities: "the total sum would have a significant effect" (Cadevall Artigues, 2012). The municipalities, both the Danish as the Barcelonan, have the feeling that the general status of climate action in the European member states is 'inaction'. On the international level, debates and conferences of the parties – as part of the UNFCCC – do not result in clear action. Hence, different voices are saying that the local authorities are the crucial actors in combatting climate change and the move to a more sustainable energy system. These visions become imbedded in the European strategy of working bottom up and approaching the local level, as evident with the Covenant.

For some municipalities joining the Covenant is part of Business as Usual. The 'sincere innovators' have a favourable political context facilitating the debate on a sustainable energy system. In the case of Zealand, signatories have been working on a comprehensive energy system for already some time before signing the Covenant. In case of Næstved, local politicians have always been concerned with environmental topics. Margit Lund, climate coordinator at the municipality, recalls the development of a local Climate Action Plan in 2008 before signing the Covenant: "As part of the CAP we developed an audit of local GHG emissions from all sectors in the municipality (traffic, energy, municipal buildings, etc.)" (Lund, 2012). The same counts for Ringsted. Niels Philip Jensen, environmental

officer of the municipality of Ringsted, argues that "by late autumn 2008, there was an anonymous political agreement that Ringsted should focus on the topic of climate change and develop adequate policy" (Jensen, 2012). In Solrød, both the political and the administrative level, have since long been working on energy efficiency and climate related issues. The local politicians are very progressive on the topic and hence not difficult to convince when it comes down to singing the Covenant. Rasmus Bo Hansen, project coordinator at Solrød Municipality explains: "our aim is a 50% reduction of GHG emissions by 2025" (Hansen, 2012). Moreover, "because of the Covenant we are actually ahead on our energy efficiency goals which now exceed the 20%" clarifies Hansen (Hansen, 2012). Finally, also Roskilde has made the decision to join rather easily since the authority had a green policy agenda implemented since some time already. The group of civil servants working on the topic of Agenda 21 focussed on internal environmental policy and trying to incorporate the 'outside world' on this topic. The vision of the covenant was therefore in line with the focus of this working group pushing to join the Covenant.

A similar situation is the case in the minority of the Barcelonan signatories where energy and climate issues can be found high on the agenda. Santa Perpètua de Mogoda is one of them. Teresa Martinez Barchino, head of the environmental department of the municipality, indicates that the municipality has been working for a long time on the implementation of Agenda 21. Together with the development of the SEAP the municipality has set up a mobility plan (Martinez Barchino, 2012). Barcelona is in a similar situation: "We did not have to adjust the direction in which we were already working" (Pol Gili & Soldevilla i Garcia, 2012). The city of Barcelona has been asking for such a non-competitive cooperation across Europe for already some time. As the competencies for energy policy are on national or regional level, the need for a municipal-level energy plan was often questioned. The launch of the Covenant has given meaning to the local level efforts of the city (Pol Gili & Soldevilla i Garcia, 2012). However, in the majority of Barelonan municipalities the interest for investing in a sustainable energy system can only be found amongst the civil servants working on related issues. Guimel Castanyer, environmental technician of Sant Quirze del Vallès, indicates that: "it is mainly me that is looking for possible options or small projects to cut our energy use and related emissions" (Castanyer, 2012).

4.4.1. A bigger goal

The decisions in the municipality are taken with the local population in mind; local authorities have the political clout to implement policies with greater public acceptance. It enhances the feeling that the power to change lies in the hands of the people. As Terrassa emphasizes "It overcomes the feeling that actual changes happen far from home and we cannot do anything about it" (Cadevall

Artigues, 2012). The topic moves from an international scene remote from European citizens, to a local level. In this regard, the Covenant incorporates the obligation and responsibility to combat climate change in the agendas of the local policy makers.

Local action however, should fit in a larger context. The local policy maker is aware that "compared to the global, national or EU level, reductions at the municipal level contribute insignificant", says Terrassa (Cadevall Artigues, 2012). Moreover, this vision reflects the approach of the Deputation to address and convince the municipalities to sign all at once, "suming up all the small efforts will finally lead to a significant contribution" reassures Terrassa (Cadevall Artigues, 2012). Rasmus Bo Hansen, project coordinator at Solrød Municipality confirms the necessity of incorporating the local level: "One cannot solve the problem from a sole supranational perspective; one has to incorporate the municiaplities" (Hansen, 2012). Why a regional approach is important for Rasmus Bo Hansen is because "to formulate a comprehensive answer to the problem, you need to look at the whole region and the (energy) potentials available on a regional basis" (Hansen, 2012).

By bringing municipalities across Europe closer to each other and by combining their emission reduction targets, the Covenant increases the weight of local energy efforts and increases their visibility. This vision is shared by all the signatories in the research. "The Covenant gives us the feeling that we are all working on something bigger" indicates Jordi Serracanta, Councillor for Environment and Sustainability of the municipality of Manresa, "it gives a meaning to our small efforts" (Serracanta, 2012). Although a number of Danish municipalities argue that similar facilities could be provided by other, maybe more regionally focused initiatives, the Covenant frames local efforts in a broader context. Bjarne Rasmussen, coordinator of sustainable Region of Zealand acknowledges the "the critical feeling of being part of a collective system" as very important for the region of Zealand (Rasmussen, 2012). Collective action provides those who work on the topic with a feeling of a shared burden to be bared by all the municipalities in the region and in Europe. Moreover, because of political and social pressure the chances of staying committed to the objectives increases. As Rasmussen explains it: "Working in a bigger group makes you more committed to what you promise" (Rasmussen, 2012).

4.4.2. Beyond municipal Borders

"The advantage of the Covenant is that it triggers and pushes the municipality to look outside the borders of its municipal organization, and thinks about how to approach private sectors, industries and households" says Niels Philip Jensen, environmental officer of the municipality of Ringsted (Jensen, 2012). The advantage of the broadening of the municipal influential scope is acknowledged

by all the municipalities in Zealand. A similar vision can be found in literature. Bulkeley et al. (2009) argue that urban climate governance was initially mainly concerned with self-regulation. Municipalities sought responses to the question of emission reduction of their own estate and operations. Currently, a wider range of local authorities have incorporated measures to combat climate change in the local political agenda (Bulkeley *et al.*, 2009). Subsequently, urban climate governance incorporates sectors and areas outside the sole municipal authority (Bulkeley, 2010). This can be concluded by the involvement of a growing number of actors, also from outside the municipal administration and the large number of projects and activities in responding to the issue.

An outwards approach is emphasized by the Covenant and enhances the possibilities of reaching the objectives since it broadens the scope of the authority's actions. The SEAP provides a 'common language to communicate with different sectors', since it uses similar indicators when addressing emissions. Notwithstanding this emphasis, approaching these sectors has been rather difficult in most of the municipalities. Undoubtedly, "it is more easy to increase the energy efficiency of your own buildings instead of controlling transportation and heating systems", says Thomas Niebuhr, administration officer for Climate & Sustainability of the municipality of Roskilde (Niebuhr, 2012). As literature indicates, the sector of energy provisioning is one in which European local authorities have been engaged throughout history (Collier, 1997; Bulkeley & Kern, 2006; Monstadt, 2007). However, in current times, this influence is weakening. The municipality has no direct control over sectors outside the municipality. Possibilities to influence them are rather limited. The authorities mainly rely on awareness rising about possible energy savings (Niebuhr, 2012).

4.4.3.   Motives to combat climate change

The majority of the municipalities indicate that the local motive to combat Climate Change is twofold. On the one hand municipalities mention the need to reduce the emission of GHGs. Every single authority and entity in society should take its responsibility to lower its emissions to prevent dangerous climate change from happening (Bernet, 2012; Xandri, 2012). On the other hand, an important reason is the economic advantages associated with adequate climate and energy policies. As Ramon Xandri, secretary of the municipalities of Avià and Castellar del Riu, puts it: "investing in energy efficiency and renewable energy production possibly generates new additional economic revenues" (Xandri, 2012). Furthermore, Francesc Bernet head of department on environment and sustainability of the municipality of Santa Coloma de Gramenet indicates that increased energy independency is one of its municipality's goals: "likewise the European Union which is dependent on e.g. Russia for gas or the Middle East for petroleum, we strive for local energy independency" (Bernet, 2012). A totally different view comes from Sant Quirze del Vallès. Guimel Castanyer,

environmental technician, indicates that the only reason to develop an energy strategy is to live up to the expectations of the Deputation and the European Institutions. He argues that the authorities do so in order to be "not the only one that is not following the rules" (Castanyer, 2012).

The Danish municipalities' motive to combat climate change is a similar combination between a sustainable future and economic advantages. The University of Roskilde has shown the possibility of green jobs emerging from investment in a sustainable energy strategy. With the help of these University studies, the general public and civil servants get convinced of the economic benefits (Niebuhr, 2012). Even the private sectors, the small and medium sized enterprises of Lolland see economic advantages in working on the energy and climate topic (Pedersen, 2012). The mayor of Solrød looked at this issue as a topic to "bring together the die-hard economist and the extreme environmentalist" (Hansen, 2012). This vision resembles the findings of Rutland & Aylett (2008). They argue that the issue of energy efficiency is an issue enabling the mobilization of extreme interests and tackle very divergent goals by similar policy measures (Rutland & Aylett, 2008). Moreover, combatting climate change also helps local authorities lose their dependence on import of energy sources from abroad (Lund, 2012).

4.4.4. The economic impact of investing in a sustainable energy system

As described above, the economic advantages of investing in a sustainable energy system are for many local authorities an important motivation. By performing an ex-ante evaluation of a possible investment, the economic impact of joining the Covenant becomes clear. The majority of the municipalities have not conducted an ex-ante evaluation before joining. In case of the province of Barcelona, none of the studied municipalities have done so. Terrassa explains: "The goal has set more because of its good sounding, 20-20-20, I don't think any signatory sees this as a realistic goal". Sant Quirze del Vallès admits that it will be the first to sign these kind of initiatives, to later on realise that there is a lack of interests and resources to implement the planned actions (Castanyer, 2012). However, on the regional level, the Deputation together with the EIB studied the viability of investing in the energy efficiency. The evaluation concluded a positive result with a potential profit of 3000 million euros.

Overall, only three signatories in this research have conducted an ex-ante evaluation to assess the possibility of achieving the goals set forth in the SEAP. Ringsted and Roskilde have performed a qualitative ex-ante evaluation based on experiences and assumptions from former projects. As Niels Philip Jensen, environmental officer of the municipality of Ringsted, adds: "Because of the local factors [significant GHG reductions in the past and a large potential for renewable energy investment

in the municipality] we assumed that it [signing the Covenant] is possible and that it wouldn't require an extraordinary effort" (Jensen, 2012). The municipality of Rubí executed an evaluation to see whether the financial capacity of the authority allows the number of actions listed in their SEAP to reach a 20% reduction. This cost was estimated around 11.5 million euros (Morera Marce, 2012).

4.5.   Insights in local energy use

Thanks to the Sustainable Energy Action Plan (SEAP) and the Emission Baseline Inventory (EBI), all the municipalities across Europe use a similar methodology in calculating local GHG emissions (Rasmussen, 2012). The use of similar working methods and indicators provides in a 'common language' to enhance communication amongst signatories, since energy use and emissions are explained by the use of similar indicators and methodology (Niebuhr, 2012; Hansen, 2012). "With the SEAP our municipality has a document that can be used to compare the current progress with the sustainability goals" Jordi Serracanta, Councillor for Environment and Sustainability of the municipality of Manresa, explains (Serracanta, 2012). It enhances comparability and cooperation with neighbouring municipalities, and facilitates strategic planning (Hansen, 2012; Bernet, 2012; Niebuhr, 2012; Pol Gili & Soldevilla i Garcia, 2012).

Even though the development of the SEAP has been seen as an administrative burden, the result of an extensive energy analysis of the municipality's energy infrastructure is regarded by the majority of Barcelonan and Danish municipality as one of the main advantages of signing the Covenant. This initial evaluation is a crucial part of the SEAP and provides the local authorities with insight in their own energy use. It reveals the key-points in the energy system that causes excessive GHG emissions (Xandri, 2012). The information from a scientific audit is of key importance to develop a solid starting position and a framework to conduct a local sustainable energy strategy or a climate action plan, with a series of actions. It serves in monitoring the energy use on a permanent basis and provides the authorities with the methodology for calculating the emissions and energy use (Hansen, 2012; Bernet, 2012).

The Deputation of Barcelona has provided the municipalities that signed the Covenant with the possibility to contract an audit firm paid for by the regional authority to help in the development of the SEAP and its key aspect – the baseline emission inventory (Cucurull, 2012; Bernet, 2012; Xandri, 2012). These experts are supposed to analyse the municipality's energy use in terms of actual consumption. This has been done by collecting general information through the data bases of the Deputation and specific data from the different municipalities. Before the municipality is left with the obligation to provide the region with its local data, collected by the audit firm, the Deputation

primarily collects data valuable for all the municipalities. This information can easily be retrieved through the different service companies. This process of two level data retrieving is called 'Circulos de Indicadores' (Cucurull, 2012). Subsequent, these two information sources are combined to form the basis of the SEAP, listing a series of possible actions to obtain this desired level of future energy consumption (Bernet, 2012). Teresa Martinez Barchino, head of the environmental department of Santa Perpètua de Mogoda, explains how that works concretely "[…] we as a municipality receive a half-filled form which lacks information that is exclusively known by the separate municipalities" (Martinez Barchino, 2012). The list of possible measures and actions does not differ that much across municipalities because they all cope with similar problems (Cadevall Artigues, 2012). From this list of actions accompanied with the related expenses, the municipality develops a strategy (Cucurull, 2012). This strategy – written down in concrete terms in the SEAP – has been acknowledged as a key document in developing adequate climate change policy (Bernet, 2012). As a result, the Deputation diminishes the workload for the municipalities and it is left with the necessary information of the whole region based on the use of the same templates and structure which facilitates its coordination function. Both the initial data collection done by the Deputation, and appointing an audit firm has been a great help to the local authorities.

Thanks to the information sessions organized by the University, the Danish municipalities gained knowledge on how to set up the SEAP. After these courses, the municipalities were responsible to develop the SEAP on their own. While some municipalities (Ringsted among others) have developed the document on their own, others have consulted additional support from the university (e.g. Roskilde) or an audit firm (Niebuhr, 2012).

Undertaking the development of a baseline inventory is attributed to the signing of the Covenant, both by the signatories of Zealand and the province of Barcelona. With the exception of a few, the development of such a baseline scenario or related monitoring plan would never have occurred without the backing of the Covenant. However a difference between the provinces persists. The municipalities of Denmark indicate that the Covenant has speeded up the process of developing an audit: "the evaluation of the local emissions would probably happened in the future, but definitely not now, not so fast and not all the municipalities together" says Margit Lund, climate coordinator at the municipality of Næstved (Lund, 2012). Moreover, Thomas Niebuhr, administration officer for Climate & Sustainability of the municipality of Roskilde, acknowledges that only the pioneering municipalities would have conducted a similar inventory. Hence, the Covenant has provided a push for the smaller less-resourceful municipalities in the region (Niebuhr, 2012).

4.5.1. SEAP overlaps other audits

Since the region of Zealand is known for its historical background in combatting climate change it is of no surprise that the baseline emission inventory of the SEAP overlaps with already existing evaluation schemes. As part of the KlimaKommuner the municipalities have indeed develloped emission inventories, but only of the municipal sector, i.e. the municipal buildings, its fleet, etc. To keep track on the progress, an evaluation is made every year and the goal is to lower CO_2 emissions by 2% each year. The scope of the Covenant is different. As part of the SEAP, the municipalities are expected to include evaluations of all the sectors inside their municipal borders, such as transport, energy use, and the private sector. These requirements increase the complexity of developing a SEAP. In the case of the KlimaKommuner developing a baseline inventory is less burdensome since such an evaluation is made based on "your own spendings of which the data are easily to retreive" says Niels Philip Jensen, environmental officer of the municipality of Ringsted (Jensen, 2012). Because both networks require an emission outlook there are voices suggesting a jointly execution of both. Nonetheless this would be superfluous since each handles a very distinct range of sectors. Moreover signing the Covenant and launching the KlimaKommuner occurred at the same time, so the methodology and indicators of these inventories are highly similar (Jensen, 2012). Rasmus Bo Hansen, project coordinator at Solrød Municipality refers to the latter audit as a "more general strategy to streamline our actions" (Hansen, 2012). Anne Pedersen, head of the Climate and Energy Project at the municipality of Lolland agrees that both audits do not overlap (Pedersen, 2012).

In the province of Barcelona, no municipality encountered any problems with overlapping monitoring systems. Only the city of Barcelona had already a monitoring system in place. Nevertheless, the Barcelona Energy Agency has taken up the challenge to develop a system that intends to combat climate change similar to the requirements of the SEAP, and also incorporate the issue of local air pollution (Pol Gili & Soldevilla i Garcia, 2012).

4.6. Long term strategy building

Literature on urban responses to the issue of climate change suggests that cities committed to GHG reduction targets, prefer the use of no-regret measures on an ad-hoc basis. These local authorities often fail to pursue a systematic and structured approach (Alber & Kern, 2008), despite of the numerous efforts of transnational networks to systematise local responses (Bulkeley, 2010). This section examines the advantages of the development of the SEAP, a long term climate action plan and the EBI. Hereafter it touches upon the process of monitoring and reporting on local progress. It

focuses on the necessity of feedback and the lack thereof. Finally, the administrative burden and possible costs for the local authorities are described.

The majority of respondents indicate the importance of the role the Covenant played in the development of a local sustainable energy strategy. Especially for municipalities lacking experience in climate change and energy policy, the Covenant provides promising possibilities. Gerard Pol Gili states, project engineer at Barcelona's Energy Agency: "It gives them a kick-off" (Pol Gili & Soldevilla i Garcia, 2012). The information generated by the Covenant spurs curiosity amongst several local authorities because an internal audit provides insights in the energy consumption. Furthermore, through horizontal cooperation the authorities get to know about interesting projects launched by neighbouring municipalities (Pol Gili & Soldevilla i Garcia, 2012). Not only does the Covenant helps lagging authorities, it is also of use to the pioneers. Santa Perpètua de Mogoda has always been working on 'sustainability' topics such as the implementation of agenda 21. However, an overarching vision guiding these measures has been lacking. The municipality emphasizes the importance of a related department or civil servant managing the implementation process of the local energy plan. The development of a long term action plan based on the insights from the Emission Baseline Inventory is made possible due to the Covenant.

Strategic planning is seen as an essential element in adequate environmental policy. By developing a baseline emission scenario and later on a long term strategy which is set out in the SEAP, activities can better be coordinated. It provides the possibility of planning the necessary actions and investments over a longer timeframe and therefore increases the efficiency of actions taken (Hansen, 2012). It indicates the direction the authorities are heading – in terms of a general focus – and the steps that need to be taken to get there (Martinez Barchino, 2012). It helps local administrations not to lose focus, possibly changing every time the political level is renewed (Cadevall Artigues, 2012). As Marc Cadevall Artigues, Head of Technical Services of Environment and Sustainability of Terrassa, puts it: "[…] this document assembles all the strategies, policies and measures that our municipality was already working on, in a list of 28 actions that need to be implemented in the next 8 years" (Cadevall Artigues, 2012). Francesc Bernet, head of department on environment and sustainability of the municipality of Santa Coloma de Gramenet indicates the key importance of an overarching strategy for the issue of climate change or energy: "energy is an issue that spreads over several areas in the political organisation, therefore a more general sustainability guide is necessary" (Bernet, 2012). He also adds that such a strategy enhances decision making based on rational planning and not on an intuitive basis.

The need for long term planning becomes eminent and challenging in times of crisis. Domenec Cucurull, environmental service manager of the Deputation of Barcelona argues that the municipalities are currently occupied with challenges that need a solution on the spot and cannot wait for the outcome of a long term investment. Although as a result more attention is given to safeguard the primary need of the population, he acknowledges that the authorities shouldn't lose sight on the Covenant which proposes a long term strategy. A strategy of solving problems on a day to day basis is not efficient policy making. "A municipality should develop long term goals and an overarching strategy" states Cucurull (Cucurull, 2012). He adds that the Covenant contributes to the development of such a strategy.

The Covenant is understood as a technical strategy and not so much politically coloured. This approach is seen as circumventing the difficult and log political apparatus and directly addressing the relevant technicians and civil servants of the local authorities (Bernet, 2012). Nevertheless, a key requisite for this strategy to be implemented and deliver the necessary results is political incorporation. Lopez Murie, technician of the department on environment of Polinyà argues: "The Covenant can only help us when the politicians are incorporating this vision in their policies" (Murie, 2012). Santa Perpètua de Mogoda agrees: "The only moment that we are going to make advancements is when the politicians take a decision to do so" (Martinez Barchino, 2012).

4.6.1. Monitoring and reporting

Every two years, the municipalities need to conduct an evaluation on the progress made towards obtaining the reduction targets. These results are presented to the regional authority and later to the Covenant of Mayors Office (CoMO). In case a municipality is not able to comply with the strategy it has set out itself, they will be expelled from the network. The regional authority acknowledges the importance of such a follow-up and monitoring plan and therefore provides support in developing the SEAP and collecting the data on the local energy use (Cucurull, 2012; Martinez Barchino, 2012). To comply with the requirements of the Covenant and the SEAP, the signatories need to monitor the energy use of all their municipal buildings (Cadevall Artigues, 2012).

The monitoring process has in general been seen as an advantage to keep track on the progress made in the local sustainability strategy. With the feedback coming from the CoMO, the authorities can improve their strategy. Guimel Castanyer, environmental technician of Sant Quirze del Vallès, is sure that "this will give us the incentive to improve the SEAP and hence the situation" (Castanyer, 2012). However, not only optimism comes from the respondents. After a first initial audit, the development of the Emission Baseline Scenario, not much feedback has been provided to the local

authorities. Castanyer indicates that "nobody has read the SEAP up till now" (Castanyer, 2012). The municipalities all indicate the lack of feedback from the CoMO after finalizing their SEAP. Furthermore, Lopez Murie, technician of the department on environment of Polinyà, criticizes the undue use of audits and monitoring which hardly lead to the improvement of policies or long term strategies (Murie, 2012). Finally, a monitoring process requires extensive financial resources. Terrassa relates its impasse of not being able to finalize the evaluation of its baseline scenario of 2011 to the lack of available resources. It is argued that financial support from the regional governments is mainly used to keep the monitoring process going (Cadevall Artigues, 2012).

A continuous monitoring of the progress in the municipality on developing the EBI and the SEAP calls for the liberation of additional resources. The required data should fit in a very detailed framework. Although such an action plan increases effectiveness, the potential to reach the objectives and finally compliance to the CoMO, it is also seen as a burden amongst the respondents. Gathering the essential data entails a resource intensive study at the municipal level. Niels Philip Jensen, environmental officer of the municipality of Ringsted, argues that details are equally important in a later stage: "a more logical approach would be us municipalities indicating our plans and provide all the details afterwards" (Jensen, 2012). Furthermore, the technicality of the required information is rather high: "even for our department, a technical department, the requirements are rather detailed" says Jensen (Jensen, 2012). Solrød argues that the scarce resources should preferably be invested in the execution of policies and measures (Hansen, 2012). The Barcelonan municipalities share a similar vision. The lack of resources and work forces make it hard to live up to the expectations (Martinez Barchino, 2012).

4.6.2. Feedback

The need for feedback from the CoMO on the municipality's EBI and SEAP is indicated by all the respondents as eminent in order to continue the work they have started. Every second year the local authorities are expected to develop an update, re-evaluate the existing goals and set-up new ones. Based on the analyses and revision of the work done, the municipalities can continue working on emission reduction policies and redirect the local strategy if necessary. However, without feedback on the initial baseline scenario, municipalities get demotivated since they do not know whether they are on the right track. Sanctions for those who are not able to live up to the goals they have set forward would enhance the quality of the network (Niebuhr, 2012).

Amongst the municipalities, the lack of feedback on the achievements and developed strategie is worrying the representatives of the authorities. They are surprised that no feedback has been

provided, although the municipalities have complied with the CoMO's requirements. Of the 3700 signatories, only 300 municipalities' SEAP have been approved. Francesc Bernet, head of department on environment and sustainability of the municipality of Santa Coloma de Gramenet assumes that the reason for delay can be explained by the search for a commonly used methodology and related indicators (Bernet, 2012). He expresses his displeasure: "I don't like that we have been working on the SEAP and that they are now thinking about a revision of the indicators" (Bernet, 2012). Guimel Castanyer, environmental technician of Sant Quirze del Vallès, emphasizes the importance of time: "the earlier we know about possible adjustments the higher our chances of reaching the goals set forth in our SEAP" (Castanyer, 2012).

If feedback remains absent, the survival of the Covenant is endangered. Without feedback or consequences for no-compliance, the network will lose its current power. Local authorities can use the SEAP to improve the local sustainability strategy and calculate their emissions based on self-developed methodology. Nevertheless, the power of the initiative lies in its cross-national character bounding all the municipalities. It succeeded in getting all the authorities on the right track and it would be a shame if without any feedback or follow-up this influence would diminish. Most of those municipalities that launched policies are now very excited to move on. "The European level should provide a clear signal and set-forth long term goals for the local authorities to adapt" says Peter Dorff Hansen head of unit on Nature and Environment, part of department Technology and Environment of the municipality of Sorø (Hansen, 2012). However, the majority of authorities in Zealand indicate that they continue their energy and climate change strategy even without a reaction from the supranational level.

4.6.3. Additional resources for joining the Covenant

In order to develop the EBI, the SEAP and eventually implement the projects and measures listed in the local sustainable energy strategy, the municipalities are in need of additional local capacity and resources. The majority of Barcelonan municipalities have liberated additional financial resources at the time the SEAP needed to be developed. The city of Barcelona has liberated and directed a certain budget to the Barcelona Energy Agency responsible for the coordination and conduction of these kinds of policies and projects. This Agency has contracted a private audit firm to help in the development of the combined monitoring plan that incorporated both energy and air quality issues (Pol Gili & Soldevilla i Garcia, 2012). In the case of Avià, Ramon Xandri, secretary of the municipality, explains: "additional staff has been contracted to collect all our energy bills and to calculate the municipality's concumption of a timespan from 2007 to 2010" (Xandri, 2012).

Although the municipalities acknowledge that increased liberation of resources is needed to execute sustainability projects, the financial capacities of the authorities at the moment are critically low. However, for further implementation of the actions and measures listed in the SEAP, no additional capacity has been made available. The authorities have continued working with the structures available (Bernet, 2012; Morera Marce, 2012; Xandri, 2012). Guimel Castanyer environmental technician of Sant Quirze del Vallès, indicates: "we are quite limited and we organize the implementation of the Covenant with existing personnel and resources" (Castanyer, 2012). Furthermore, Barcelona also indicates that the development of the list of measures as part of the SEAP and the local energy strategy has just finished. The next step is to conduct these actions which is the moment to consider the liberation of additional resources, or apply for funding (Pol Gili & Soldevilla i Garcia, 2012).

The contrary is true for other municipalities in the region. In most cases, the efforts are kept to a minimum. Marc Cadevall Artigues, Head of Technical Services of Environment and Sustainability, indicates that the budget of Terrassa on energy related issues has been 50.000 euros for the year 2012 (Cadevall Artigues, 2012). Rubí has hired two more civil servants to assist with the development and implementation of 'Rubí Brillo' (Morera Marce, 2012). Santa Perpètua de Mogoda dedicates a yearly sum to the implementation of the SEAP. In 2008 this was 8.000 euros and last year 2011, it was 12.000 euros. Moreover, the latter has contracted two university students to work on the monitoring process (Martinez Barchino, 2012).

Other municipalities have rearranged the municipality's structure. This restructuring has happened because the Covenant requires the local authorities to set-up an 'energy manager'. This can be a single person or a reference group with the exclusive task of managing the energy use of the administration and develop energy saving policies and think about sustainable energy production possibilities. In the case of the city of Terrassa, the administration still has to figure out how this position can be developed, how the package of responsibilities should look like and what the political clout of this department is (Cadevall Artigues, 2012). In the municipalities of Santa Coloma de Gramenet and Manresa, a synergy has been set-up between several departments of the municipality, i.e. environment, management of green and blue spaces, urban infrastructure, and mobility. This is a logical move since several projects defined in the SEAP touch upon a variety of departments (Bernet, 2012; Serracanta, 2012). Finally, in the case of Rubí, there has been a restructuring of the organisation. Marta Morera Marce, councillor on economic city planning of the municipality of Rubí, herself has been moved from the department on environment to the department on strategic planning incorporating the responsibilities of the former departments on economic competitiveness,

social organisation and the private sector. This reorganisation has happened because projects incorporated in the local SEAP – such as 'Rubí Brillo' – affect different areas of the municipal organisation. Whether the restructuring of the administration is a direct result of joining the Covenant and whether it has improved the work efficiency in these authorities, remains questionable (Morera Marce, 2012).

A continuation with existing financial and institutional resources also counts for the Danish communities. Only incremental adjustments can be noted, such as the set-up of a project group focussing on the climate issues in Ringsted (Jensen, 2012). On the contrary, in Roskilde, the local authority has been liberating own resources to execute and develop the SEAP. Although the region have applied for support from the EIB through ELENA, the authority mainly uses own resources. The representative of Roskilde, Thomas Niebuhr, administration officer for Climate & Sustainability, has been contracted to coordinate the actions as part of the Covenant. Niebuhr explains the commitment of the authority: "once the focus is set on the topic (of climate change and energy) one does not need much effort to collect extra resources" (Niebuhr, 2012).

4.7. Information availability

Based on the information of the EBI, the local authorities have constructed a long term strategy including a number of measures and projects that will help them to successfully reach their goals. Once the municipalities are in the run of executing these projects and implementing the measures, they can get involved in numerous processes of information exchange and execute political pressure. The interaction between different signatories is assumed to facilitate the implementation process. The different forms of interaction, the exchange of information and the effect of these processes are discussed in this section.

4.7.1. Information Exchange

Overall, the municipalities of both regions mention information exchange between participating authorities as a crucial network facility offered by the Covenant. The Barcelonan municipalities focus on the dissemination of expertise between municipalities of the same region and across national borders facilitated by the Covenant (Bernet, 2012). The availability of information, experiences, certain special projects, but also common stumbling blocks and hindrances in implementing climate and energy measures is of special interest to municipalities that are inexperienced on the topic (Pol Gili & Soldevilla i Garcia, 2012). Local authorities can get inspired by cooperating with more advanced municipalities and by informing themselves about projects, experiences and information from other

signatories. Peter Dorff Hansen, head of unit on Nature and Environment, part of department Technology and Environment of the municipality of Sorø clarifies the value of the availability of such information: "it pushes the municipalities to undertake action" and "they have been inspired by the high targets set out by the Covenant" (Hansen, 2012). This kind of information can be retrieved through two central databases set up by the Covenant; the "Benchmark of Excellence" and the catalogue of SEAPs (Cadevall Artigues, 2012). Signatories are regularly updated about the content of this database by an email based newsletter. Nevertheless, all municipalities – including the inexperienced ones – admit that they have neglected using it. Accoding to Marc Cadevall Artigues, Head of Technical Services of Environment and Sustainability of Terrassa, this happens because the newsletter displays best-practices from "municipalities that are too different from ours" (Cadevall Artigues, 2012). If even these digital formats are hardly known, one can imagine that direct contact between signatories occurs hardly to never.

Although information exchange is regarded as a network facility of key importance, overall the municipalities do not have the feeling that they can contribute to the functioning or even further development of the network. Being a pioneer authority or making use of top-of-the art technology is seen as a prerequisite to function as an example for other signatories (Castanyer, 2012). Nevertheless, respondents have indicated to share experiences with others. Santa Coloma de Gramenet has shared information and has functioned as an example for neighbouring authorities on a solar project. Rubí points out that their key-project 'Rubí Brillo' is a pioneer in its kind and functions as a regional, national and international example on energy efficiency and renewable energy. The project has been enthusiastically welcomed by the authorities present at the presentation, including the Deputation, and the 'Institució Catalana de Recerca i Estudis Avançats (ICREA)'. The city of Barcelona has developed know-how on a range of sustainable projects that can be of help to authorities across the region and Europe. The city has succeeded in the challenging task to combine the issue of climate change and energy with the improvement of local air quality (Pol Gili & Soldevilla i Garcia, 2012).

Respondents in Zealand regard themselves or launched projects, as an example for neighbouring authorities. Roskilde sees its cooperation with the University, the development of an internal institute to evaluate the municipal's energy use, and their sensitization campaigns as possibly applying for 'best practices'. Sensitizing campaigns can be an example for smaller municipalities with little resources to invest in ground-breaking projects (Niebuhr, 2012). Ringsted also regards its local projects and experiences on district heating as a benchmark for other municipalities in the region (Jensen, 2012). The biomass plant in Solrød can be an example for other municipalities. The support

the municipality has received from the region during the development of this project came with one condition; exchange the experiences with other authorities (Hansen, 2012). The region sees an example in the services it has provided to the local authorities and the cooperation with other bodies in the region. It has been contacted by other regions in Denmark and Europe to provide advice (Rasmussen, 2012).

Others, such as Næstved and Sorø doubt the significance of their role as example for other authorities. Peter Dorff Hansen, head of unit on Nature and Environment, part of department Technology and Environment of the municipality of Sorø argues that all the municipalities in the region – including his – are worthy of the status of pioneer since they manage to implement policies despite their very limited budget (Hansen, 2012). They regard their efforts as small but meaningful. However, the information needs to be translated into a presentable format in order to function as an example for other authorities, a process that would cost too much time and money (Jensen, 2012). Margit Lund, climate coordinator at the municipality of Næstved, adds that there have been no authorities from outside Denmark that have contacted the authority to retrieve information about a specific project (Lund, 2012).

4.7.2. Policy learning

The notion of policy learning underpins the importance of similarity between municipalities in the process of policy learning. Regional cooperation is highly favoured by municipalities in Zealand and Barcelona. In the process of information exchange, contextual applicability – depending on available financial resources, the local climate, and the available renewable energy sources – plays a significant role. Contextual restrains are perceived by a number of signatories (Martinez Barchino, 2012; Pol Gili & Soldevilla i Garcia, 2012). Terrassa has been working on biomass, but fails in finding neighbouring municipalities that are experimenting with the same renewable energy source. Marc Cadevall Artigues, Head of Technical Services of Environment and Sustainability of Terrassa, recognizes the problem: "We try to indicate municipalities similar to ours, but in our surroundings we are the only ones" (Cadevall Artigues, 2012). On the contrary, Roskilde does find likeminded authorities in its regional surrounding. The municipality cooperates with those authorities that are mutually connected because of the regional heating systems. Moreover, the construction and magnitude of its peer cities facilitates cooperation on transport and energy since similar problems are of a daily order (Niebuhr, 2012). Similarly, Santa Coloma de Gramenet acknowledges that all municipalities in the surrounding of Barcelona have been working on similar topics by similar means. For Francesc Bernet, head of department on environment and sustainability of the municipality of Santa Coloma de

Gramenet it explains why actual information exchange becomes superfluous, hardly occurs and why cooperation is more important between municipalities is more important (Bernet, 2012).

Although information exchange across national borders hardly occurs, the key-role other European municipalities play as an example for the local authority is acknowledged (Serracanta, Councillor for Environment and Sustainability of the municipality of Manresa, 2012). Jordi Serracanta, Councillor for Environment and Sustainability of the municipality of Manresa, indicates that his authorities and others in the province can possibly learn a lot from other European cases, especially from the Nordic countries. He states it as follows: "[…] they function as an example for us to see what objectives we want to reach and where we want to head" (Serracanta, Councillor for Environment and Sustainability of the municipality of Manresa, 2012). Manresa's reason to abstain from using the available information or cooperating with these authorities is that the Mediterranean municipalities are very different from other regions 'up-north' in Europe. The importance of cooperation rather than mere exchange of information on digital platforms is recognized by the overwhelming majority of the signatories. As Margit Lund, climate coordinator at the municipality of Næstved, puts it: "Exchanging information is one thing, but by cooperation you can share the details of the implementation process, rather than only the ultimate results" (Lund, 2012).

4.7.3. Cooperation

Cooperation is seen as one of the major advantages of interaction between the signatories. Face to face interaction stimulates the exchange of experiences and makes one municipality get inspired by another (Pedersen, 2012). More practically, uniting forces increases the effectiveness of political action. It increases the visibility and costs can be shared amongst participants (Rasmussen, 2012).

In the case of Zealand, cooperation on related topics occurred already before signing the Covenant. Nevertheless, the Covenant has strengthened regional cooperation. Direct contact vis-à-vis neighbouring municipalities and between the municipalities and the regional authority has increased. The information sessions launched in cooperation with the University of Roskilde has created an open way of cooperation and exchanging information amongst the municipalities and minimizes competition amongst the local authorities. As a result, not only the successful stories and projects will be mentioned in order to impress, also the difficulties and struggles to reach the desired result (Niebuhr, 2012).

Cooperation and networking in the region knows several characteristics. First, the local authorities maintain a firm relationship with municipalities with whom they have had positive contact earlier.

Margit Lund, climate coordinator at the municipality: "Næstved meets the other 15 municipalities of the region several times a year to discuss related topics, especially the more central themes applicable for all municipalities" (Lund, 2012). She acknowledges that cooperation occurred in the past, but has intensified because of the Covenant. Second, personal contacts between civil servants are the basis for cooperation between authorities. Roskilde has been inspired by its neighbouring municipality Næstved, on a project called ChoosEV on the use of electric cars. The exchange of information occurs because of personal contacts between the municipalities. Third, the municipal outlook determines whether authorities feel the need for cooperation. As Niels Philip Jensen, environmental officer of the municipality of Ringsted, indicates: "equal size is attractive" (Jensen, 2012). Roskilde cooperates with the neighbouring communities of Næstved and Slagelse because they have a similar what they call 'municipal outlook' (Niebuhr, 2012). Authorities that have similar needs and beliefs connect better. In the case of climate change, this means authorities that want to contribute to a global solution for climate change. Fourth, cooperation appears to be more intense with authorities in the direct surrounding. Infrastructures such as district heating or traffic touch upon a number of municipalities in the region. Hence cooperation seems a logic consequence. In the case of Næstved these are Vordingborg, Slagelse and Ringsted. Together with Slagelse, Næstved works on a project on district heating, because the company (Fasan) that produces the heating delivers it to both Næstved and Slagelse (Lund, 2012).

External cooperation between the municipalities and local authorities outside the region (national or European) hardly occurs. The main stumbling block that holds municipalities from engaging in external initiatives is the lack of resources. At the moment the authorities are occupied planning and implementing the actions set out in the SEAP. In these tasks local cooperation serves the need of expertise on energy planning. External cooperation on the contrary does not (Rasmussen, 2012). Thought, the region is involved in a European project called Bioenergy promotion (BioenergyPromotion, 2013). This project incorporates three local municipalities of the region. Although they will not be direct partners, together with the university, the region will help them setting up activities and provide them with data input (Rasmussen, 2012).

Neither cooperation (internal and external) nor any other forms of synergies have occurred in the case of Barcelona due to signing of the Covenant. Terrassa sees the absence of cooperation in the coordination of the Deputation of Barcelona. As a result of the collaboration between the Deputation and the different audit firms, the municipalities are considered to empanel a range of measures to form a strategy. Hence, the region manages the actions taken by the signatories and preserves overview. Since the actions are managed by a central institute, direct contact between signatories

and cooperation becomes redundant. The SEAPs from the different municipalities are very much alike and the administrations have to deal with similar problems, so the Deputation has set out strategies and linked measures from which the municipality can choose in function of the applicability based on the characteristics of the municipality and its resources. Local cooperation seems needless (Cadevall Artigues, 2012). However, Francesc Bernet, head of department on environment and sustainability of the municipality of Santa Coloma de Gramenet points out that in case cooperation does indeed occur, it is due to already existing networks such as Xarxasost (Bernet, 2012).

For a number of municipalities, network facilities such as information sharing and cooperation are nothing new. The Barcelonan signatories are member of a local sustainability network, called Xarxasost. As part of this network, a central database has been set-up in which several initiatives and projects are posted and presented (Bernet, 2012; Castanyer, 2012). In Denmark, the majority of the signatories are also enrolled in other similar networks. The network Klimakommuner focuses mainly on energy use and emissions of the municipal institutions and organisation, such as the buildings and its fleet. Another initiative is an informal network in which the region and the municipalities are seated and of which the participants meet three to four times a year (Rasmussen, 2012).

Cooperation between municipalities already occurred before the signing of the Covenant. The Danish energy agency together with the regional platform for municipalities – the Kommunernes Landsforening – has developed a framework called Strategisk energiplanlægning (Strategic energy planning) in order to help municipalities and regions to develop a sustainable energy strategy. One of the goals is to stimulate cooperation across municipal and regional borders (Hansen, 2012). Furthermore, cooperation occurs between municipalities in the region and the regional authority to gather know-how on operating the heating system. Since local municipalities have recently regained the responsibility over the region's heat plants, expertise and technical support is lacking. Cooperation is institutionalized in a regional climate network.

Networking has "unquestionably increased after signing" says Margit Lund, climate coordinator at the municipality of Næstved (Lund, 2012). Niels Philip Jensen, environmental officer of the municipality of Ringsted, shares the same opinion and attributes all interaction in the region on topics such as climate change and energy to the launch of the Covenant: "cooperation on related topics definitely occurs because of the Covenant of Mayors" (Jensen, 2012). Only one municipality in the region holds a different view. The representative of Solrød, Rasmus Bo Hansen, project coordinator argues nothing has changed since the signing of the Covenant. Interaction regarding specific projects only happens sporadically and informally. He does however acknowledges the

importance of increased cooperation to develop a regional plan on the development of renewable energy plants and accordingly cooperates with the municipalities of Koge and Greve on the development of a local biomass plant (Hansen, 2012).

4.7.4. Awareness rising

A network such as the Covenant "translates the topic of climate change and sustainable energy into a more concrete and believable, touchable problem, by giving it a local face", says Jordi Serracanta, Councillor for Environment and Sustainability of the municipality of Manresa (Serracanta, 2012). Awareness on the issue of climate change and sustainable energy has changed amongst different actors and on different levels. Since signing the Covenant, municipalities have invested in initiatives aiming at awareness rising. The focus of the Covenant coincides with initiatives such as the energy week organized in the region of Zealand. Therefore the municipality of Roskilde organizes its projects on similar dates to mainstream the messages it sends out to the inhabitants (Niebuhr, 2012). Raising awareness amongst Zealand's highly informed citizens due to the COP15 and its related events and policies, is not an easy task.

Amongst Barcelonan signatories much can still be done. Rubí's flagship 'Rubí Brillo' is a transversal project incorporating several municipal departments, the public sphere and related industrial, domestic and commercial sectors. Hence this project and the 2011 plan on reactivation of the local economy, sensitizes all related civil servants from different departments such as urban planning, culture, and education, the broad citizenry and the stakeholders in the related sectors (Morera Marce, 2012). In the municipality of Avià, concrete measures to increase attention of energy use in schools have led to a minimal extent of awareness rising (Xandri, 2012). The majority of Barcelona's and Zealand's municipalities fail in approaching the broad public. Civil society or any other sector outside the municipal administration such as the industrial sector is hard to reach.

That is however, "not important" as Bjarne Rasmussen, coordinator of sustainable Region of Zealand notes. Awareness does rise amongst those that matter: "amongst the civil servants and the planners, the politicians (and especially the mayor) and the people working in the energy department" (Rasmussen, 2012). Margit Lund, climate coordinator at the municipality of Næstved, acknowledges that the awareness on the topic of climate change and energy has grown amongst the civil servants of the municipality's administration (Lund, 2012). A similar situation can be found in Solrød. The civil servants here have been able to show the politicians that the problem of climate change can be solved in an efficient way serving both the economic and ecological needs (Hansen, 2012). Santa Perpètua de Mogoda regards this awareness rising as a necessary first step: "all departments have to

take energy or mobility in mind in their daily practices" says Teresa Martinez Barchino, head of the environmental department of Santa Perpètua de Mogoda (Martinez Barchino, 2012). A better understanding of the issue is the basis for concrete and effective policies. A common mistake amongst politicians in the smaller villages of Barcelona is considering the problem of climate change an issue of nature conservation. The municipality of Sant Quirze del Vallès is surrounded by natural areas which have contributed to cleaner air in comparison with other signatories in the region. Developing measures on climate change has become therefore a similar agenda topic as conserving the quality of life, not so much as a question of sustainable energy management (Castanyer, 2012).

The level of altered awareness due to the Covenant of officials and politicians differs. A change herein should also be understood in its context. In the case of Ringsted the project group launched to work on the issue of energy and climate change is assembled of civil servants that were already involved in similar policy areas (Jensen, 2012). In Roskilde, the average civil servant lacks awareness. Apart from those working in related departments e.g. traffic or urban planning "not much has changed" says Thomas Niebuhr, administration officer for Climate & Sustainability of the municipality of Roskilde (Niebuhr, 2012). Lopez Murie, technician of the department on environment of Polinyà, explains that it is often hard to mobilize civil servants: "every time I propose a measure and add that it is obligatory, I have to explain the politicians again what the Covenant is" (Murie, 2012).

Nonetheless, the majority of the signatories indicate that awareness inside the municipal authority has certainly risen since the joining of the Covenant. As a result, very distinct political groups have found themselves agreeing on the issue of climate change and energy, since the signing occurred in name of the whole plenary of the local authority. A shift in local political mentality is indeed necessary if the goals set out by the Covenant are to be achieved (Martinez Barchino, 2012).

4.7.5. Political recognition

"The 'sustainable energy train' is one to 'jump on' in order not to be left behind" as Jordi Serracanta, Councillor for Environment and Sustainability of the municipality of Manresa, puts it. He regards the Covenant as an instrument to work on the connection with Europe and its sustainability strategy. "We do not want to miss out and therefore we join" concludes Jordi Serracanta (Serracanta, 2012). In Zealand, Thomas Niebuhr, administration officer for Climate & Sustainability of the municipality of Roskilde indicates a similar situation in which: "[…] the municipalities are all combatting […] to become climate neutral" (Niebuhr, 2012). The mere fact that nearly all municipalities in the surrounding have joined or consider joining has influences nearly all respondents in both provinces. Political recognition is of especial interest to local politicians responsible for signing the Covenant at

the moment the decision is pressing (Hansen, 2012). According to Peter Dorff Hansen, head of unit Nature and Environment, part of department on Technology of the municipality of Sorø, it was unthinkable that his municipality would not sign. The pressure from all the surrounding authorities was that high that refusing was not an option. This recognition also applies to the administrative level. For civil servants political recognition works encouraging "when others are saying that we are doing a good job", says Hansen (Hansen, 2012). Political recognition is of key-importance at moments where the issue can possibly lose attention. In case related topics tend to fall back on the political agenda, prosperous policies in the surrounding authorities will prompt renewed attention.

Niels Philip Jensen, environmental officer of the municipality of Ringsted, is not sure whether political recognition during the implementation phase is still as important as when the decision has been made: "the pursue of our obligations and goals is more important than the recognition from neighbouring municipalities" (Jensen, 2012). However, Santa Perpètua de Mogoda notes the importance of political recognition regarding a specific project (Martinez Barchino, 2012). Since this network connects all neighbouring communities, comparing becomes a powerful method of putting pressure on the politicians. Rasmus Bo Hansen, project coordinator at the municipality of Solrød notes that he can force politicians to undertake action by referring to a neighbouring municipality that is performing better. When developing policies, politicians "like to hear that they are doing a good job, definitely compared to other municipalities" says Hansen (Hansen, 2012).

4.7.6. Political pressure

A more coercive way to remind responsible policy makers about their commitment made by signing the Covenant, is by performing political pressure. The mere fact that signing the Covenant is based on unanimity provides policy makers, both civil servants and politicians with 'a stick behind the door'. This instrument can be used to remind politicians or other civil servants of the municipality's commitment. As Terrassa indicates: "The Covenant and the SEAP serve in developing a strategy and a document which can use to remember the politicians and civil servants about our environmental and energy and climate strategy" says Marc Cadevall Artigues, Head of Technical Services of Environment and Sustainability (Cadevall Artigues, 2012). A similar argument can be heard in the region of Zealand. Rasmus Bo Hansen, project coordinator at the municipality of Solrød acknowledges the importance of a consensus in signing the Covenant: "since all the political parties have signed the network in the plenary, using this agreement in the future to remember the politicians that they or their predecessors have signed the Covenant and now should live up to the expectations" (Hansen, 2012). Performing political pressure occurs inside and outside the municipal functioning, and also across time.

Although a comprehensive strategy at the municipal administration is important, a political basis for the topic is essential. Despite of changes in the political or administrative structure the goals set forth in the SEAP persist (Morera Marce, 2012). Lacking interest in the topic can occur easily when local political structures are reorganized due to elections. A possible change of strategy every time the political level gets a new outlook is prevented, by providing a long term strategy in a time span longer than only four years. The current Mayor of Roskilde is not the one that has signed the Covenant and consequently is not bond to solving the issue. Since the Covenant is signed by the previous mayor, the current mayor has no choice but continue to work on the topic (Niebuhr, 2012). For lagging villages like Polinyà, the document can be used to remind politicians of their responsibility and promises. In reality however, the representative of the municipality Lopez Murie, technician of the department on environment, doubts about the impact hereof. The short term thinking of politicians negatively influences the progress of the local action plan. Murie criticises: "The current government doesn't know what the Covenant is about and none of the values of this initiative are incorporated in local policies" (Murie, 2012).

4.7.7. Visibility

Signing the Covenant has improved the visibility of local and regional authorities. By cooperating and networking, municipalities discover the possibility to create a positive image as a pioneer launching ground breaking policies. Frontrunners spearheading innovative ideas that can possibly combine initiatives promoting local economic development with mitigation measures attract investments of the private sector or funding from public budgets to stimulate sustainable development (Granberg & Elander, 2007).

Viewed in a larger context, decisions made at local level with respect to the Covenant are associated with more significance and clout because they are associated with the European level and numerous municipalities across Europe. In approaching diverse actors in society – both internally and externally of the local administration – the name of the Covenant carries a connotation of actively working on the energy topic. The administration of Rubí refers to the network when cooperating with industrial sectors (Morera Marce, 2012). Polinyà agrees, "By the Covenant, a technician can justify the fact that he is working on related projects, executing evaluations and even politicians" says technician of the department on environment of Polinyà (Murie, 2012).

A similar situation can be found in the region of Zealand. As a supporting structure it has applied for funding from ELENA in name of all the municipalities. In this application process, the label of the Covenant has contributed to a positive and progressive image of the region in European spheres

(Hansen, 2012). It has also helped signatories to seek support at different levels, inside and outside their own administration (Lund, 2012). The Danish municipalities acknowledge the advantages of the Covenant in framing and explaining the position of the local authority on the topic of climate change and energy. Although the municipality regards this framing as a facilitating factor, it is not a goal in itself: "we do not use the logo on our website to sell ourselves" says Thomas Niebuhr, administration officer for Climate & Sustainability of the municipality of Roskilde, although "we do refer to the Covenant and to the Klimakommuner […] when explaining our work on climate change" (Niebuhr, 2012).

The opposite is also true. In case one municipality does not comply with the requirements of the Covenant or with the goals that it set forth to do, it will be expelled from the network. Although no financial sanctions are linked to dropping out of the network, it does certainly sully the municipality's image.

4.8.   Indicators and methodology

The use of similar indicators and methodology enhances cooperation between different municipalities, facilitates comparison (over time) between authorities and makes the aggregate effect of local efforts tangible by summarizing exact numbers of reduced emissions. A reasonable and streamlined methodology improves communication because everybody uses the same 'language'. As Bjarne Rasmussen, coordinator of sustainable Region of Zealand emphasizes the key function of the Covenant: "it puts a more professional and harmonised emphasis on working on this topic" (Rasmussen, 2012).

Although the guidelines set up by the Covenant indicate how the SEAP should be developed, the methods used by the municipalities to calculate their GHG emissions differ widely amongst the signatories. Since the actual executer of the emission inventory differs from one municipality to the other, the methods do so accordingly. Whereas a number of municipalities contracted an external audit firm, others have enjoyed the help from the university or have set up a working group in the internal organization of the municipality. An emission inventory is very much methodology dependent since the results are determined by which parts of the energy production procedure are taken into account. Hence, the CoMO is currently looking for a system based on a similar methodology. It is a challenging task to find a way of calculating the emissions upon which every municipality agrees.

The Barcelonan respondents agree on the logic behind a similar methodology. Before the Deputation of Barcelona develops regional-wide indicators, it is negotiating with the CoMO on European-wide variants. As Domenec Cucurull, environmental service manager of the Deputation of Barcelona defends the lack of regional initiative: "Logically that we do not develop our own, because then we have to adjust it from the moment that the COMO agrees on another methodology" (Cucurull, 2012). The Barcelona Energy Agency has been working on a monitoring system that reflects the efforts done on climate change and energy, as asked for by the Covenant, but also on the improvement of the local air quality. The city of Barcelona has proposed this particular monitoring system to the CoMO as a possible European approach (Pol Gili & Soldevilla i Garcia, 2012). All the municipalities have an own idea about how this methodology should look like. Francesc Bernet, head of department on environment and sustainability of the municipality of Santa Coloma de Gramenet argues that similar indicators should be used at both the production and the demand side of the energy production system (Bernet, Head of Department on Environment and Sustainability, Santa Coloma de Gramenet, 2012). Marc Cadevall Artigues, Head of Technical Services of Environment and Sustainability of Terrassa, argues that "it is better to think in reduction per capita" instead of an overall reduction target, similar to every municipality in Europe (Cadevall Artigues, 2012).

Zealand's municipalities emphasize the need for streamlined data collection. "The final information that we will use depends on the data available to the municipality" explains Niels Philip Jensen, environmental officer of the municipality of Ringsted (Jensen, 2012). Such a system makes comparison between municipalities pointless, since the data depends on availability. Moreover, the EBI is based on information currently available and as a result of current measure techniques. Future emissions will be almost certain be calculated based on further enhanced measure techniques probably resulting in more precise data. This makes comparison with the data in the EBI irrelevant (Jensen, 2012). Rasmus Bo Hansen, project coordinator at the municipality of Solrød acknowledges: "Reporting is useless unless the same methodology is used" (Hansen, 2012). He argues that a similar methodology should be used by the region as by the CoMO. This would facilitate reporting to both bodies.

The follow-up programme set up by the University of Roskilde in cooperation with the regional authority focuses on the enhancement of regional planning of sustainable energy installations. The development and improvement of the methodology continues. The programme aims at streamlining the methodologies used in the different municipalities and developing a GHG emission inventory for the whole region. This is necessary to get the methodology in line with other EU directives and the UN system. Although the University has proposed a certain methodology created in cooperation with

the municipality and the region, not every authority has used the same (Rasmussen, 2012). This has shown both the need for a unified approach and the inability of the region to force local authorities to use a region-wide methodology. The signatories in the region have used different institutes or external audit firms to calculate local GHG emissions (Pedersen, 2012). Therefore it is essential to find a method applicable for all local authorities. Such a method combines separate studies of individual municipalities and is based on the methodology proposed by the Covenant to develop the SEAP. Although it is important to use similar methodology, it is not necessary to reach the commitments set out in the Covenant. The conclusions as a result from local GHG calculations are similar across the different municipalities, supporting the main goal of the SEAP. It becomes clear that the authorities think and act in a similar way, although not the same methodology is used to get here (Rasmussen, 2012).

4.9. Conclusion

This chapter has shown local authorities becoming aware of the numerous facilities the Covenant has put in place in order to enhance local climate governance. The majority of the facilities have proven to benefit the municipalities and enhance the development of a comprehensive local climate and sustainable energy strategy. Table 3 shows a comparison between the two regions and how the municipalities experience the facilities of the Covenant.

The role of the regional authority in both provinces has proven to be of crucial importance in the decision of local authorities to sign the Covenant. They have provided all kinds of technical, financial and political support and guidance to the signatories in the first phases of joining. As a result, the role of a local policy entrepreneur has been rather negligible. The cooperation between the University of Roskilde and the Region of Zealand has facilitated the process of developing the Emission Baseline Inventory by translating the detailed requirements of the Covenant into a more understandable format and standardized forms. The University has organized information sessions and has further monitored local progress in conducting the EBI analysis which is similar to an energy audit. The Deputation has opted for a different, equally valuable approach. By first gathering overall energy consumption data of the local authorities through the local service companies, the signatories received forms requiring data on local energy consumption, with one half already filled out. For the other half, the Deputation has appointed audit firms to help the local authorities in filling out of what is left of the requirements.

The benefits of other facilities have not been unanimously agreed upon, as was the case with capacity building of the regional authorities. Although to varying degrees, municipalities in both

provinces have emphasized that because of the Covenant, their local efforts carry more significance. Since they are part of an overall strategy, the aggregated effect of small, on the ground initiatives do lead to significant emission reduction on the European and global level. It has motivated numerous municipalities to set up local projects. The Covenant has also succeeded in emphasizing the opportunities of combatting climate change, especially in economic terms. Furthermore, municipalities of both regions have highly valued the need for a baseline scenario. Insights in current emissions and their actual origin is a necessary basis for a sustainable energy and climate strategy including a list of activities that need to be taken to reach these goals. The development of a local long-term strategy based on these insights is also due to the push of the Covenant. Unfortunately the CoMO has failed in providing feedback on the progress of local authorities. This has been seen as a demotivating factor amongst the respondents and should be solved before numerous municipalities lose interest.

Exchange of information in theory sounds very enhancing and beneficial. However, the municipalities have not engaged in retrieving information on projects from neighbouring, let alone other European municipalities, nor have they been contacted by other signatories about projects they are working on. They withhold from promoting local initiatives, since they do not see the added value. Hence, it does not lead to policy learning. The advantage of information exchange is that it functions as a first step towards cooperation. Although all the municipalities acknowledge the importance of cooperation to reach sustainability goals, not all have participated in its performance. The respondents of Zealand all do relate the increased cooperation amongst the municipalities in the region to the joining of the Covenant. Here it is however important to recall a firm basis of interaction provided by the local network KlimaKommuner. Although a similar network – Xarxasost – has been in place in the province of Barcelona, and the municipalities agree that they all experience similar sustainability challenges, no attempt in cooperation has been undertaken.

Finally, a great value has been attributed to the possibility of executing political pressure. Since the municipalities have signed the Covenant based on unanimity, the authority has agreed on joining as a whole. This decision can be used as 'a stick behind the door' to remind any official or politician, any time now or in the future, about the sustainable goals the municipality has set out to obtain. It enhances continuity in local policy and frames sustainability as a central starting point in decision making.

Table 3: Horizontal cooperation facilities offered by the Covenant of Mayors to the municipalities in the province of Barcelona and the region of Zealand

Joint TMN and Covenant facilities	The Province of Barcelona	The Region of Zealand
Voluntary network	No difference between a voluntary or obligatory network	Efforts become imbedded in the political vision instead of being understood as another obligation from higher up
Local capacity building	Local network Xarxasost functions as platform to gather municipalities and discuss collective joining Regional authority has played crucial role in providing support: • Technical Support: Gathering initial energy consumption data through service companies and appointing audit firms • Financial Support: Redirecting financial resources to local authorities, originating from ELENA fund. • Political Support: Gathering municipalities to discuss collective joining. "Deputation as tutor of the initiative" enjoys much respect from local authorities	Local network Klimakommuner functions as platform to gather municipalities and discuss collective joining Regional authority has played crucial role in providing support: • Technical Support: Training programme for local officials and follow-up on progress of development of local sustainable energy strategy • Financial Support: Gathering the municipalities in the region to apply for ELENA. Additional liberation of own resources • Political Support: Joining has been promoted by the region amongst local politicians
Cooperation	No need for cooperation since the Deputation arranges coordination of local actions.	• Cooperation occurred already before signing, but intensified because of joining. • By cooperation useful information emerges, i.e. information on overcoming obstacles and concrete struggles, rather than information on best-practices. Preferred option instead of centrally organized databases. • No cooperation across regional or national borders
Information exchange	• Centrally organized information exchange: availability of information and exchange possibly functions as a source of inspiration. Available databases "Benchmark of Excellence" and the catalogue of SEAPs, and e-mail base newsletter are neglected. Municipalities do not feel to be in the position to contribute • Direct exchange of information between municipalities occurred in the case of Santa Coloma de Gramenet, Rubí	In general, municipalities do not feel to be in the position to contribute. • Centrally organized information exchange: availability of information and exchange possibly functions as a source of inspiration. Available databases "Benchmark of Excellence" and the catalogue of SEAPs, and e-mail base newsletter are neglected. • Direct exchange of information between signatories occurred in the case of Roskilde, Ringsted, Solrød, the region of Zealand.

Policy learning (technical and normative)	• Technical: replicability depends on contextual factors. Learning from likeminded municipalities with a similar 'municipal outlook' and those coping with similar policy challenges • Normative: working on climate change has been regarded as brining economic advantages (certainly perceived so by the regional authority that has conducted an ex-ante evaluation). Economic understanding clearly related to signing. No learning from municipalities across regional or national borders	• Technical: policy learning occurred through enhanced cooperation between municipalities • Normative: working on climate change has been regarded as brining economic opportunities. Economic understanding of combatting climate change already strong before signing. No learning from municipalities across regional or national borders
A policy entrepreneur	• The regional authority: the Deputation of Barcelona • Local community network: Xarxasost	• Local politicians (e.g. mayor of Solrød: Niels Horup; municipal director of Roskilde: Henrik Kolind; mayor of Næstved) • Institutionalized in the energy department • The regional authority: the Region of Zealand • Local community network: Klimakommuner
Significance for local initiatives	The Covenant increases the weight of local energy efforts since it frames the initiatives in a broader context. It emphasizes the aggregated impact of all the local emission reductions on the European and global level. The Covenant spreads the "critical feeling of being part of a collective system".	
Awareness and visibility	• Awareness rising amongst the public is difficult. • Officials are more aware but does not change daily practices • Image of signatories has improved. • Label of Covenant means "combatting climate change and implementing a sustainable energy structure"	• Rather high rate of awareness amongst the broad regional public. Hard to further increase. • Awareness amongst officials has increased • Image of signatories has improved. Label of Covenant means "combatting climate change and implementing a sustainable energy structure"
Specific Covenant facilities	**The Province of Barcelona**	**The Region of Zealand**
Insight in local energy use	• Use of similar methodology to calculate energy use and related GHG emissions, enhancing cooperation and comparability • Developing the EBI and SEAP needs capacity. Majority of municipalities continue working with available capacity.	• Use of similar methodology to calculate energy use and related GHG emissions, enhancing cooperation and comparability • Developing the EBI and SEAP with existing capacity. Minority liberates additional resources (Roskilde)

	Minority liberates additional resources (Avià)	
Long term strategy panning, monitoring and feedback	• Extensive energy evaluation as a crucial basis to build a long term sustainable energy strategy on • Long term strategy crucial to obtain goals • Developing a long term strategy would have probably never occurred in absence of the Covenant • Monitoring to keep track on progress and adjust direction in strategy if necessary • Resources necessary for monitoring possibly better used to implement projects • Lack of feedback works demotivating compared to the hard work delivered. Giving up as a possible reaction	• Extensive energy evaluation as a crucial basis to build a long term sustainable energy strategy on • Long term strategy crucial to obtain emission reduction goals in most cost-effective way • Covenant has speeded up the process of developing long term strategy • Resources necessary for monitoring possibly better used to implement projects • Lack of feedback can possibly work demotivating, but is no reason to give up working on the issue
Political Pressure	Covenant signed based on unanimity provides 'a stick behind the door' to remind any official or politician, any time now or in the future, about the sustainable goals the municipality has set out to obtain.	
Political Recognition	• Municipalities have joined because neighbouring municipalities have joined. • Political pressure also of importance during the implementation phase	• Municipalities have joined because neighbouring municipalities have joined • Political pressure also of importance during the implementation phase
Incorporating actors outside the municipal sphere	Incorporation of sectors outside the authority's administration, e.g. domestic and industrial sector broadens the impact of local policies	

Source: the author

Chapter 5. The outcome of the Covenant of Mayors

This final chapter on the empirical findings of the comparative case-study focuses on the projects and initiatives that have been launched due to signing the Covenant. The different projects that have been set up at the local level in both provinces are described. Causality between the set-up of such an initiative and signing the Covenant is hard to prove. Different measures have been decided upon in an earlier stage. Nevertheless, the projects serve similar goals as the Covenant. As Guimel Castanyer, environmental technician of Sant Quirze del Vallès, notes: "no projects have been conducted exclusively for the Covenant" (Castanyer, 2012). However, the sections attempt to find out whether joining the Covenant has had a positive effect on setting up these initiatives.

Setting up these initiatives and projects requires liberating financial resources by the local authority. The current global economic situation is – to say the least – not favourable to launch new investments. In a first section of this chapter the economic crisis and how it is experienced by the respondents, is addressed (5.1.). When responding to climate change, the scope of measures of a municipality is highly depending on the regional, national and supranational policy context (see Chapter 3: Vertical cooperation). The competencies of the municipal government and the extent to which these can be exercised autonomously, determine in which areas the municipalities can easily launch projects. A second section focuses on the local competences and its influence on local level climate governance (5.2.). The results of the case study are described in a third section (5.3.). Divided in two , the subheadings separately examine the two regions. The major findings are summarized in the conclusion in the end (5.4.).

5.1.   The impact of the economic crisis

The impact of the economic crisis on available financial resources has negatively affected the execution of projects developed as a result of signing the Covenant. For the respondents in Barcelona it is common knowledge that the lack of attention on the issue of climate change is a result of the economic crisis. However within the academic community, researchers share the opinion that "climate change remains a marginal issue" (Alber & Kern, 2008), regardless of the economic situation in Europe. Domenec Cucurull, environmental service manager of the Deputation of Barcelona argues that the municipalities are mainly occupied with eminent challenges that need a solution on the spot and cannot wait for the outcome of a long term investment. These day to day solutions use up all the

available resources. In order to comply with the requirements of the Covenant, local authorities are screening the list of projects in the SEAP for easy-to-implement and inexpensive measures (Castanyer, 2012). Teresa Martinez Barchino, head of the environmental department of Santa Perpètua de Mogoda indicates that the plans in her municipality have not stopped because of the crisis, but rather advance very slowly (Martinez Barchino, 2012). A similar voice echoes in Zealand. Niels Philip Jensen, environmental officer of the municipality of Ringsted indicates that in times of crisis, issues like energy and climate change enjoy less financial attention (Jensen, 2012).

However, the crisis is not only seen as a restraining factor. It also enhances measures to increase energy efficiency and energy saving. Guimel Castanyer, environmental technician of Sant Quirze del Vallès puts it very simple: "[…] there is no money to pay all the municipality's expenses" (Castanyer, 2012). Therefore, local communities need to look for policies that decrease local energy consumption. As a result, it will help the local authorities to reach the goals set out in the SEAP. It is expected that because of the crisis, not because of the Covenant, energy consumption will decrease significantly (Castanyer, 2012). This opinion is shared by the municipalities in Zealand. Since fewer resources are available, they are spent more cautious.

Another important reason for the absence of investment in new projects is the excellent state of the current installations. Marc Cadevall Artigues, head of technical services of environment and sustainability in the municipality of Terrassa explains: "only when the current energy system has become obsolete, investment in renewable energy technologies becomes profitable" (Cadevall Artigues, 2012). Thomas Niebuhr, administration officer for Climate & Sustainability of the municipality of Roskilde shares a similar opinion, he argues that the town hosts mainly low emitting sectors in which emission reduction measures are hard to be executed (Niebuhr, 2012).

5.2.   Local energy and climate competences

Municipalities with significant control key areas are rare. The list of key sectors related to GHG emissions is summarized by Bulkeley (2010, p. 238, based on Collier, 1997; Lebel *et al.*, 2007; Schreurs, 2008; Sugiyama & Takeuchi, 2008) as followed: "energy policy, pricing, and supply; the development of urban infrastructures, such as transport systems; the use of economic instruments, such as taxes and charges; as well as energy efficiency standards for buildings and appliances". In general, areas where municipalities dispose over more autonomy are those with regard to land-use planning, education, and voluntary programs. A certain range of measures and initiatives that appear to be most easily to devise by local authorities are listed by Schreurs (2008, p. 353): "climate change and renewable energy target setting, energy efficiency incentive programs, educational efforts,

green local government procurement standards, public transportation policies, public-private partnership agreements with local businesses, and tree planting". Interventions in energy and energy efficiency have been amongst the most popular measures in urban climate governance. In case of the Covenant of Mayors, a key focus on energy issues is evident. The majority of municipalities in Europe have a long history of engagement in sectors like management and energy provision. However, the influence of the municipal authorities over these issues is waning (Collier, 1997; Bulkeley & Kern, 2006; Monstadt, 2007).

Energy efficiency is a topic that reframes various political and societal interests as part of the issue of climate change. New alliances and collaborations hence find herein a firm basis (Rutland & Aylett, 2008). The issue of energy efficiency is increasingly linked to energy security and energy costs. By translating energy savings into a broader context that of security issues, sustainable energy and climate change find their place more easily set on the urban policy agenda (Hodson & Marvin, 2009). Measures and policies are increasingly framed in a way that side benefits in terms of mitigation are highlighted (Romero Lankao, 2007; Bulkeley *et al.*, 2009).

With the SEAP, local authorities have developed a list of measures for the near future. Once this list is known, it is time for planning and implementation. The responsibility for executing these projects lies at the municipalities (Hansen, 2012). The civil servants underpin the need for action. Marta Morera Marce councillor on economic city planning of the municipality of Rubí, notes that "the time to talk about climate change is far behind us, there is enough information at hand and based on this information, municipalities should take action" (Morera Marce, 2012).

5.3.   Local sustainable energy and climate initiatives

This section addresses the local sustainable energy and climate initiatives that have been set up in both provinces by the time the Covenant was signed. Every example clarifies how the responsible municipality understands a certain project in relation to the Covenant. By the end of the each sub-heading a small conclusion summarizes the main findings for a certain region. An overall conclusion can be found in the end of the chapter.

5.3.1. The province of Barcelona

In the Barcelonan municipalities, the focus has been on the monitoring of the energy consumption of every municipal owned installation and consequently developing statistics of the consumption in the period 2007-2010 (Xandri, 2012). Signing the Covenant requires the local authorities to conduct an energy audit of the municipality's installations. This is called the Emission Baseline Inventory (EBI)

and facilitates long term action planning. Energy audits have been undertaken all across Barcelona. The municipality of Santa Perpètua de Mogoda conducts energy audits for commercial and private actors. These audits provide essential insight in the energy consumption and the concrete actions that can be taken in order to lower consumption. A concrete measure to reduce the authority's electricity use has been taken amongst all the signatories. The replacement of old mercury-vapour light bulbs by low-pressure sodium lightning has been (or will be) conducted by all the respondents. In the city of Manresa, this measure should safe 80.000 euros on a yearly basis since some parts of the city still run on very inefficient lightning. The project is conducted by a private firm called SECE (Sociedad Española de Construcciones Eléctricas). Furthermore, the city is considering the use of led-technology (Serracanta, 2012). This low-cost measure in public lightning has been incorporated in the list of measures of the SEAP. In the majority of Barcelonan municipalities, this is the only measure taken.

Unfortunately, follow up on the audits hardly occurs. It is not known whether the proposed measures are translated into concrete action. It is assumed that the information resulting from these audits spurs the launch of sensitization campaigns (Martinez Barchino, 2012). Different projects have been launched to raise awareness amongst the broad public and the municipality's civil servants and politicians. Like Polinyà, most of the municipalities have been sensitizing the civil servants in the municipal administration (Murie, 2012). Santa Perpètua de Mogoda has put efforts in setting-up campaigns, such as the energy-week that has been organised for some preceding years, and environmental education for civil servants positioned in different departments of the municipality working on related themes. Reasoning behind sensitization and awareness rising is increased effectiveness in local level Climate Governance. Measures to increase the sustainable function of the municipality need to be incorporated at different levels and areas of the authority's organization. The Covenant helps in spreading information and insights about topics such as renewable energy and climate change. An increased number of civil servants and inhabitants concerned about the issue, helps in acquiring a more prominent place on the political agenda (Martinez Barchino, 2012).

Another focus of action amongst the Barcelonan municipalities has been the improvement of sustainable transport. This ranges from the improvement of the infrastructure for pedestrians and cyclists in both Polinyà and Santa Perpètua de Mogoda, to the development of five extra metro stations and separate collection of organic waste to facilitate the production of energy from biomass in Santa Coloma de Gramenet, (Bernet, 2012). The efforts result in a lower local emission GHGs and therefore link up to the goals set forth in the SEAP of the municipalities.

A widely applicable sustainable energy action for the Barcelonan municipalities that has been incorporated in the SEAP is the instalment of solar panels. It is a renewable energy source that is of high important in southern regions of Europe. Santa Perpetua has installed solar panels on the roof of several municipal buildings and tries to persuade the industrial sector to do the same. This sector however is very reluctant to install solar installations because of the RD 1/2012 (See 3.1.1 The national level) (Martinez Barchino, 2012). The municipality of Polinyà installed solar installations on the roof of sport centres and schools because of the solar ordinance[2], not as a result of signing the Covenant. Due to a lack of maintenance this project has not delivered the desired results (Murie, 2012). In Manresa, a private company has invested 18.700 euros in a solar installation owned by the municipality. The profits are currently noticeable and are collected by the private investor. However, as a result of RD 1/2012 further developments of similar investments are constrained (Serracanta, 2012). Finally, Marc Cadevall Artigues, Head of Technical Services of Environment and Sustainability of Terrassa, reaffirms the view of all the neighbouring authorities: " […] we were indeed installing solar panels, but […] we will not install them anymore because of the RD 1/2012 […] which makes investment in renewables not profitable" (Cadevall Artigues, 2012). Although the Covenant liberates European resources to finance the initial investment for solar panel projects, the debate around the RD 1/2012 endangers future profits.

The municipality of Rubí has been very active on issues such as sustainable energy and climate change. It has invested in a range of actions: installing capacitors and energy-efficient lightning in the municipal buildings, launching sensitization campaigns in local schools and amongst 200 families to provide an overview of domestic energy use, 'energy agents' in private buildings highlighting possible energy savings, and conducting industrial and commercial energy audits (Morera Marce, 2012). Although the decisions on these policies have already been agreed upon before signing the Covenant, the image that comes with joining strengthens the local initiatives. It has facilitated the local authority to address private actors and to convince them to collaborate. The local authority launched a project called 'Rubí Brillo' in which the municipality cooperates closely with the private industrial sector to implement adequate energy policies. Sectors outside the municipality are informed about the necessity of sustainable energy policies and the possible economic advantages of energy savings and consumption reduction. These sectors represent a key-share in local energy consumption. Wide political support has been attributed because of the wide range of social,

---

[2] Solar Thermal Obligations (STO) are legal provisions obligating owners of buildings to install a solar thermal system, mainly for new buildings or for buildings undergoing major renovation. They are in most cases part of national or regional energy laws and often implemented by means of the local building codes at municipal level. A growing number of municipalities, regions and countries (e.g. Spain, Portugal, Italy, the Baden Wuerttemberg region in Germany and some Austrian regions) are already making use of solar thermal obligations (Solar Ordinances, 2004).

economic and environmental advantages that were eminent from the beginning (Morera Marce, 2012).

The city of Barcelona has been taking action to move to a more sustainable economy for some time before singing the Covenant. With joining they have been able to combine their focus on improving local air quality with reducing local GHG emissions. This plan has been implemented 5 years ago by the 'Generalitat de Catalunya' and is now in its second phase (Bernet, 2012). The Barcelona Energy Agency develops a strategy where both the improvement of the local air quality and the reduction of GHG are the focal points (Pol Gili & Soldevilla i Garcia, 2012). The city has launched 108 projects as part of 4 programmes: Energy efficiency, Renewable energy production and efficient energy, local emissions and behaviour, information and sensitization. As part of the metropolitan area of Barcelona, Santa Coloma de Gramenet has developed a similar action plan in which climate change and a deteriorating air quality are tackled jointly (Pol Gili & Soldevilla i Garcia, 2012).

One of the actions that the municipality of Terrassa had incorporated in their SEAP was the promotion of boilers. The project has been cancelled because an economic viability study indicated a possible negative outcome. Moreover, the initial investment required by the local authority to launch the initiative, could not be made. Although the social and environmental viability of renewable energy projects is certain, the economic viability remains often questionable. Financial support can be found at different European funds, but the initial investment needs to be made by the responsible authority. An example of such an investment is the purchase of an electrical car in the municipality of Sant Quirze del Vallès. The municipality has liberated the amount of money needed for a regular car (10.000 euros). The Deputation had added another 25.000 euros to make it an electrical one (Castanyer, 2012). However, since financial resources are scarce during the time of an economic crisis, even this initial investment becomes a stumbling block. Moreover the investment possibilities have hugely decreased and are only accessible for primary investment needs. Unfortunately climate change does not belong to the primary needs of the municipality (Cadevall Artigues, 2012).

In the province of Barcelona initiatives have not been launched as a consequence of signing the Covenant. Nevertheless, joining has facilitated the implementation of on-going processes. First, it helps the authority in collaborating with the private sector since it provides a 'label' that suggest European financial support and political backing. Second, numerous municipalities have launched sensitization campaigns resulting in an increased awareness amongst policy makers, the private sector and households. It pushes the topic of sustainable energy and climate change to climb higher on the political agenda and increases the public acceptance of measures and policies. Third, it has framed local efforts in a Europeanized sustainability context. In the city of Barcelona, the Energy

Agency has combined tackling climate change with reducing local air pollution. Other smaller municipalities have linked sustainable transportation to the goals set out as part of the Covenant. Forth, it has urged municipalities to take action by requiring energy audits and a local Emission Baseline Inventory. By those insights, the local authorities understood that action is needed and can result in significant energy savings. Finally, although it is not able to lower the investment threshold which needs to be provided by the implementing authority, it succeeds in providing financial resources during the implementation phase. It has helped with installing solar panels, but has failed due to external constraints such as the Royal Decreed.

5.3.2. The region of Zealand

Bjarne Rasmussen, coordinator of sustainable Region of Zealand believes in the importance of first investing in awareness rising and hence developing small campaigns. In order to raise awareness amongst households and private sectors, different municipalities including Ringsted and the regional authority have organized the Energy Festival Zealand. The initiative is based on a former festival, the Klima-festival Sjaelland. Houses and industrial plants equipped with renewable energy technologies are open to the public. Visitors of the project could visit sites which exemplify different systems and get informed about the different technologies available. Nevertheless, the 2012 edition wasn't a big success (Jensen, 2012). Although the festival and similar initiatives have been launched for already some years in the region, the link to the Covenant has enforced the publicity of such events.

A next step is setting-up and developing sustainable energy projects by the municipalities. In developing these projects, the local authority can rely on the supporting structure of the region of Zealand, the support of the climate coordinator in the municipality and the university (Rasmussen, 2012). Such a supporting structure has come into being due to joining the Covenant. In Zealand, local heat distribution is part of the energy system which is regulated by the local authorities (Hansen, 2012). Hence measures can most easily be taken in this area of competences in which the local authorities have the decision making power. This notion of ownership is very important in being able to develop an adequate set of climate change policy. The system of district heating goes beyond municipal borders. Cooperation regarding district heating and the use of renewable energy sources as the fuel for this system has – thanks to the Covenant – been discussed on a regional level. Furthermore it is also an area in which private sectors are addressed and incorporated in the policy development since the system of district heating that

Regarding the system of district heating, the municipality of Roskilde has set up an awareness programme in a neighbouring village to lower the energy demand. Since this village is not connected to the central heating system, moving from a heating system based on fossil fuel to a system of

district heating based on renewable energy is relatively easy. With this village as an exception the issue of biomass should be regarded in a bigger context of central heating. The city of Roskilde has therein only a partial say with one waste incineration plant inside its borders. Thomas Niebuhr, administration officer for Climate & Sustainability of the municipality of Roskilde explains: "we can only push for the whole system to move in a more sustainable direction" (Niebuhr, 2012). The municipality succeeds in convincing the heating company to connect two areas of households that are currently using fossil fuel, to the system of central heating. Being signatory to the Covenant has been used to approach the private operator of the heating system.

In other policy areas concerning energy provisioning and production, local authorities have little to no competences. Adjustments in the e.g. electricity system are therefore more difficult to achieve, since it is controlled by the national authorities. Adequate policies affecting these issues can only be implemented by the national or regional level. Municipalities on that matter have no influence. Nevertheless the local authorities can and do support the levels higher up. Thomas Niebuhr explains Roskilde's contribution: "[…] we can only support the national decision making process by providing them local insights e.g. appointing suitable locations for wind farms, setting up a municipal fund for renewable energy investments or research the viability and civil support for local projects" (Niebuhr, 2012). Niebuhr's vision is that only the national authorities can realize projects that significantly lower GHG emissions.

Hence, topics like electricity and transportation pose limited options but focussing on awareness campaigns. In Roskilde, the trend of sustainable transportation has been set with a project promoting cycling and other sustainable forms of traffic. Naestved has a similar approach. A pilot programme to promote electric cars has made the municipality cooperate with a local company called ChoosEV, specialised in electric cars. The authority has provided charging stations throughout the town and financial support for candidates willing to buy such a vehicle. ChoosEV has provided 30 to 40 cars available to families of Næstved which could use these vehicles for three months. For the company it functions as a market study and for the municipality it raises awareness and provides public acceptance for a new technology. The authority of Næstved has put some effort in promoting this project amongst the neighbouring municipalities and succeeded. Some of them, like Roskilde have been inspired (Lund, 2012). This project has hardly any relation with the Covenant.

The improvement of the energy efficiency of municipal buildings is a popular investment because the authorities fully control the implementation and profit its economic impact. These kinds of measures have been taken mainly because of their economic benefit (Jensen, 2012). The investments are used to e.g. increase insulation, and install efficient boilers (Rasmussen, 2012). The reduced emissions as a

result help in reaching the municipality's targets set forth in the SEAP. All the Danish authorities have been working on the improvement of energy efficiency in municipal buildings. Margit Lund, climate coordinator at the municipality of Næstved, notes that the focus on energy efficiency in municipal buildings has everything to do with the commitments the authorities have made as part of the KlimaKommuner. In this network every authority has obliged itself to an emission reduction of 2% per year. To reach this goal, the authority has a separate department that monitors the municipal emissions, looks for measures and technologies that can be applied to increase the energy efficiency of the buildings, and works on awareness rising and the mobilization of the civil servants. Although the emission reduction is guaranteed, it has only a small effect on the total amount of GHG emissions inside the municipal's borders (Hansen, 2012). The success story from the KlimaKommuner can possibly be copied to the private- and domestic sector in the municipality. The outward looking approach of the Covenant in which measures to reduce emissions should also address external sectors can provide the solution. Hence it is noted that the Covenant provides a firm basis for future projects.

Investments in this area are possible because of the ELENA funding (Lund, 2012). In liberating additional financial resources, the Covenant has played a crucial role. One of the municipalities that have made use of these resources is Roskilde. The municipality has invested around 8.5 million euros in its own buildings (Niebuhr, 2012). Another example is Solrød, improving the local energy infrastructure. The municipality has promoted the use of biomass out of straw to provide local heating in a small neighbouring village. After initial opposition, the village is convinced about the advantages of connecting to the renewable energy grid. The plans to construct a biomass installation have been already discussed before signing the Covenant. Nonetheless the minimum reduction target would not have been as high as 20% if it was not for the Covenant (Hansen, 2012).

The region of Zealand has set up a biogas taskforce which conducts studies and investigations on the viability of biogas. The region currently holds a capacity of 19.5 kJoule, whether only 9.5 kJoule is being used (Rasmussen, 2012). This initiative has spurred several brainstorm sessions amongst the municipalities. For these kinds of initiatives, funding is available from the EU through programmes like ELENA (Rasmussen, 2012). Again, the Covenant has facilitated applications for ELENA funding. Slagelse and Næstved have engaged in cooperation to increase the use of biomass for district heating. The aim is to convince the company controlling the distribution and production system, Fasan to use biomass to produce heat. The project encounters numerous financial hindrances. The company producing the heat expects a financial incentive as a return for their investment. Moreover, DONG – Denmark's provider of gas – is not eager to see its sales drop as a result of the use of

biomass. Therefore, the latter also demands financial recovery for possible losses. Cooperation between municipalities and across sectors (public-private) has been facilitated by joining the Covenant.

The municipality of Solrød is also working on the installation of a biomass plant. The payback time of this installation should be around 5 years because of national support. Moreover "the plant will help the municipality to reach its emission reduction target of 50% in 2 years' time" says Rasmus Bo Hansen, project coordinator at the municipality of Solrød (Hansen, 2012). Speeding up this process can be related to the political backing of the 'label' that comes with joining the Covenant. The research of Tue Damsø – a master student working on a regional overview for renewable energy potential – on the potential of biomass in the province has been used by Roskilde to launch a project on biomass possibly affecting the whole region.

Due to its remoteness and its maritime environment, Lolland has launched several pilot projects that are very different from the projects running in the other municipalities. First, the local authority is working on a project for the production of algae. Algae are regarded as effectively capturing CO_2, and by doing so supporting measures for climate change adaptation and mitigation. Second, a pilot project has been set up on the production of fuell cells by the use of a hydrogen village, called Brintlandsby Vestenskov. Third, tidal energy is explored. A prototype off-shore installation has been placed near the coast of Lolland. Fourth, the municipality has been cooperating with neighbouring municipalities in the European Wind Energy Association (EWEA) to promote social acceptance for wind turbines in the region (Pedersen, 2012). Finally, the authority of Lolland cooperates with Vordingborg and Guldborg to launch the energy days together with local SME's on their island (Pedersen, 2012).

The region of Zealand shows some similarities to the province of Barcelona in how the Covenant has influenced sustainable energy projects and related policies and measures. The implementation process but also the launch of initiatives has been supported. First, awareness rising initiatives such as the Energy Festival have been widespread across the region. By signing the Covenant, these initiatives are framed as part of a wider European sustainability context. Second, other areas that are exposed to sustainable reformations, such as transport and buildings, become linked with the issue of climate change and sustainable energy. It is understood as part of the same supranational strategy. Third, district heating inherently goes beyond the municipal borders and involves a wider area. Cooperation is necessary amongst the municipal authorities to effectively regulate this heating system. Due to the Covenant, cooperation has increased and district heating has become one of the focuses in this regional approach. As a result, biomass has been promoted to become part of this

energy system, smaller municipalities are convinced to connect to the heating grid, and the university has explored biomass potential in the region. Fourth, municipalities member to the KilmaKommuner have set stringent emission reduction targets for the municipal organization (its buildings, its fleet, etc.). This approach can be copied – with support from the Covenant – to sectors outside the local authority. Fifth, pioneer municipalities have set their ambitious emission reduction levels even higher since they are 'backed up by Europe' in their local efforts. Finally, funding provided by ELENA has become more accessible to signatories due to the Covenant.

5.4.   Conclusion

The overall goal of the different projects and measures from the authorities enhance sustainable development and link up to the objectives set out as part of the Covenant. The role the Covenant has played in the initiation and implementation differs amongst the municipalities, but overall shows some interesting similarity. The 'label' that comes with joining the Covenant suggests that actions taken on the local level fit in a broader, supranational framework of climate action. Local initiatives are regarded more significant when linked to other measures and when backed with European political and financial support. It provides the authority with an image of 'climate actor'. Projects that initially do not hold a link with the Covenant, but fit in the understanding of sustainable development are linked in order to attribute a similar importance that comes with European framing. Sensitization campaigns are strengthened by this label and result in raised awareness levels. Consequently, local policymakers feel empowered to address actors outside the public sector which has resulted in cooperation. This outward looking approach promoted by the Covenant is noted to improve the effectiveness of local climate governance in the future. In the case of Zealand, the success stories from the KlimaKommuner achieved by reducing emissions within the municipal organization provide inspiration for interlinked activities with external actors. Furthermore, the Covenant has facilitated the application procedure to obtain external funding. Funding is regarded as crucial for the municipalities to understand the positive financial return when investing in sustainable energy projects. Support from ELENA has found its way more easily to the local authorities.

Besides these main findings that coincide, there are two conclusions that should be drawn separately for both regions. In the province of Barcelona, the urge to undertake action has been repeatedly linked to joining the Covenant. The insight from the EBI in local energy use has resulted in municipalities understanding the urge of tackling climate change and the significant cost-effectiveness of investing in sustainable energy systems. The region of Zealand where the regulation of district heating inherently requires high levels of intra-municipal communication, has known a

cooperation boost. Due to the Covenant, stimulated interaction has resulted in significant region wide actions such as research to the potential of biomass.

Although, the launched initiatives often relate to the emission reduction targets of the Covenant, they have not solely been set up because of joining, but based on previous decisions. This study has not succeeded in finding a causal relation between signing the Covenant and new measures taken. Undoubtedly, the Covenant forms a strong basis for further implementation of existing projects and for the launch of new initiatives in the future. It motivates signatories to continue working on the topics and raise investment levels. Concluding, the Covenant has played a stimulating role in different aspects of the implementation process of numerous initiatives.

Chapter 6. Future perspective and conclusion

This final chapter of the thesis focuses on the future perspectives of the Covenant. The different signatories hold very opposite views on how the initiative will further evolve. The first two sections separately address the challenges and possible solutions for both regions in the continuation of the Covenant. Finally, a third section provides the overall conclusions of the study.

6.1.   Barcelonan stumbling blocks

The Barcelonan signatories utter their disbelief in obtaining the goals and objectives they have set out in their SEAP. Different reasons are mentioned why focus on the Covenant will probably weaken in the future. First, the initiative is an initiative similar to many others. It is "part of fashion" says Irma Soldevilla i Garcia, project engineer at Barcelona's Energy Agency (Pol Gili & Soldevilla i Garcia, 2012). She argues that the topic is 'hot' for the moment, but is easy replaceable by another promising initiatives. "[…] In two years we call this whole sustainable energy approach; 'smart cities'" says Soldevilla i Garcia (Pol Gili & Soldevilla i Garcia, 2012). Although the essence and central focus remains similar, framing differs according to political focus and market dynamics. The temporary character of the initiative becomes evident by failing implementation. Lopez Murie, technician of the department on environment in the municipality of Polinya criticises the meaningless political debate. He argues that concrete action is lacking: "the image and the presentation look good, but the content does not mean much" (Murie, 2012).

Second, continuity in municipal action highly depends on the political leadership of the local authority. The issue of climate change or sustainable energy is often ranked in lower orders of the political agenda. Local administrations are mainly preoccupied with the wellbeing of their inhabitants. Issues such as 'sustainability' and the 'environment' are no central themes in measures taken on a daily basis. Moreover, with changing political leadership every legislature, newly elected politicians are not well informed about the values of the Covenant. Hence leadership in future generations will easily lose focus on the Covenant's objectives.

Third, politicians of the local level lack professional knowledge on the issue. Therefore, communication concerning the Covenant should reach the municipalities in a very simple and easy to understand format. A strong point of critique is uttered by Lopez Murie, technician of the department on environment in the municipality of Polinyà. He argues that the European politicians

have lost the connection with the local reality in which time, financial resources and expertise are scarce.

Fourth, the goal of 20% is argued to be an unrealistic target. Marc Cadevall Artigues, head of technical services of environment and sustainability in the municipality of Terrassa estimates the chances of reaching the target of 20% very low because the city's population and economic activity is constantly growing. Therefore these numbers should be developed based on a per capita emission reduction (Cadevall Artigues, 2012).

Fifth, pressure is lacking from the European institutions, the regional authority, i.e. the Deputation and provincial authorities, i.e. la Generalitat de Catalunya. These authorities are expected to push local entities to undertake action in the framework of the Covenant (Murie, 2012). The Deputation argues that granting more competences to the provincial authority in the area of energy would overcome this barrier. Since all the municipalities face similar problems, the Deputation is well positioned to develop measures applicable for nearly all the municipalities of the province.

Finally, the economic crisis limits the financial resources available for investments (Martinez Barchino, 2012). However, in the view of the economic crisis, the 'sustainability' issue can easily change to a different framing, e.g. 'economic savings' (Pol Gili & Soldevilla i Garcia, 2012). In the municipality of Sant Quirze del Vallès, the crisis is seen as a window of opportunity for a reduction of energy consumption. By doing so the crisis helps in reaching the local reduction targets, argues Guimel Castanyer, environmental technician (Castanyer, 2012).

A possible solution to enhance continuity in the political focus, to reconnect local and supranational policy makers and to increase pressure from higher level authorities, is to be found in a Covenant closer to the local authorities. Currently, all the meetings and conferences of the Covenant are organised in Brussels. The effort for representatives to visit Brussels is not worth taking, regarding the possible gains. Since information exchange hardly occurs across national borders, but mainly inside the region and between regions, networking should be focussed on a regional basis. Related conferences and meetings should therefore be organized on a regional basis to increase the accessibility for local authorities. Interaction between the CoMO and the signatories can occur on the spot and the moment. The CoMO could execute a check-up on the progress of the municipalities and share information simultaneously and all at once (Bernet, 2012).

6.2.   The Nordic commitment

The Danish authorities come across fewer stumbling blocks in the implementation of the requirements and the values of the Covenant. The respondents of Zealand's municipalities argue that "if our municipality commits to a certain goal, we will do everything to fulfil that obligation", says Niels Philip Jensen, environmental officer of the municipality of Ringsted (Jensen, 2012). Jensen adds that "if we weren't sure we would be able to live up to the objectives of the Covenant, we wouldn't have signed" (Jensen, 2012). An important factor in this commitment is the possible 'bad taste' it leaves if the authorities are not able to fulfil the obligations that they have set out in their SEAP. Hence, the Danish signatories are convinced that the network would last in the future, even without continuation of EU support. Additionally, since the municipalities in Zealand have a long history in climate- and energy policy, little effort is needed to continue this process. Margit Lund sees a bright future for the network and argues that it has shown its relevance for regional cooperation and could hence serve the national goal of getting energy independent from fossil fuels by 2050 (Lund, 2012).

Nevertheless, some challenges remain. First, smaller villages remote from heating or renewable energy networks, have more difficulties reaching the 20% emission reduction target (Niebuhr, 2012). Second, the lack of feedback leads to an uncertain future since the local authorities struggle with questions about the currently chosen strategy. An evaluation of the SEAP and its implementation should be available in the early phases of joining. The longer it takes the CoMO in providing feedback, the more difficult it becomes to adjust the strategy applied (Niebuhr, 2012; Rasmussen, 2012). Third, not only the local level should show devotion to tackling climate change and moving to a sustainable energy system, much is expected from the regional and national authorities in creating a favourable political framework. If such policies stay absent, Thomas Niebuhr, administration officer for Climate & Sustainability of the municipality of Roskilde argues that the sum of all the possible efforts taken by the municipality will never reach 20% (Niebuhr, 2012). Finally, a lack of resources remains a constraint for authorities to engage in sustainable energy investments.

This last challenge is tackled by Rasmus Bo Hansen, project coordinator at the municipality of Solrød. He argues that the main constrain to launch an energy project is not so much the investment itself, rather the actual process of planning the investment. Therefore, the Covenant should improve the availability of resources for the preparation phase. Furthermore, support should also expand to fully commercialised and existing technologies. Support is often plentiful for new, promising and upcoming technologies. However, installations that have proven to be successful wait a last financial injection to become a functional market instrument. The Covenant should adjust the current funding system and focus on marketable technologies by focussing on the preparation and planning by

promoting feasibility studies, authority approvals, legal and financial arrangements, business cases, public-private partnership etc. (Hansen R. , 2012).

Although no specific solutions are offered, the respondents in Zealand mention a stronger regional focus to overcome the remaining challenges. The Covenant should pay more attention to the regional characteristics of networking and cooperation between the municipalities. Consequently to provide the authorities the feeling of involvement and empowerment, gatherings should be organized on the regional level, e.g. a meeting between Southern Sweden and Zealand (Jensen, 2012). Such a meeting facilitates the exchange of information and experience between regions which would not occur as long the Covenant's focal point remains the European level.

6.3. Conclusion

In its fight against the disastrous consequences of global climate change, the European Union has developed a comprehensive policy package. The climate- and energy package focuses on European wide reduction of GHGs, saving of energy, energy efficiency and the use of renewable energy sources. By the launch of the Covenant of Mayors, local level initiatives and efforts are included in this overall framework. The network aims to facilitate the development of local measures, policies and projects focussing on the transition to a sustainable energy system. The impact of the Covenant of mayors on local climate governance is studied based on a comparative case study. The two cases are the province of Barcelona and the region of Zealand. They differ on two fundamental characteristics; being 'European-minded' and effectively combatting climate change.

The ultimate objective of joining the Covenant is reducing local emissions of GHGs. The aggregated effect of local emission reductions fits in a broader context of the EU's energy- and climate policy. By doing so, the issue of climate change and sustainable energy has been translated to a local understanding. Due to the Covenant, local level authorities have understood the urgency of tackling climate change and the possible financial benefits of investing in renewable energy and energy-efficiency. The Covenant requires local authorities to develop an 'energy audit' called the Emission Baseline Inventory (EBI). Based on these insights in local energy use and the related environmental impact, signatories have taken action by developing a long term sustainable energy action plan (the SEAP).

Projects that have been launched or will be set up in the future, intend to lead to significant emission reductions. Since these emission reductions are framed in a broader policy context of European climate action, local authorities' policies and measures are attributed more significance. They are

backed up with European political and financial support. The feeling of contributing to a wider goal has motivated numerous municipalities to set up local projects. The aggregated effect of these results contributes positively to the European goal of addressing climate change and related energy issues. Local level authorities play a significant role in international climate governance. This has been widely stated in literature (Alber & Kern, 2008; Satterthwaite, 2008; Toly, 2008; Bulkeley 2010; Rosenzweig 2011) and by different international bodies, such as the IPCCC and the UNFCCC.

The main goal of this study is to examine the role of the Covenant in the development of local climate and energy policy. The means by which the Covenant operates are enhancing horizontal cooperation between the signatories and vertical interaction between the local and supranational authorities. This dual structure of the initiative has provided facilities to its signatories shown to be successful for both pioneers and laggards. Regarding the vertical interaction between policy makers of the local and supranational authority level, this study has tried to answer the following question; does joining the Covenant of Mayors enhance the possibilities for municipal authorities to represent their local interests at supranational level? First, the analysis has shown that higher level authorities shape the policy playground for municipalities. Authorities from higher up, such as the regional and national government influence the policy context in which local authorities operate. Second, the regional authority which has been attributed significant importance in the functioning of the Covenant has performed the role of interest intermediate. Local authorities do not feel the need to be in contact with the European policy makers, since the regional authority bundles the local interests and concerns, and voices these at the supranational level.

Although bottom-up communication from the local to the supranational level has not been improved, top-down vertical dispersal of European policies and ideas has been facilitated. The Covenant is able to bypass the national authorities and interact directly with the local level. Financial support increases acceptance of European interference by the broad citizenry in local governance. These insights reaffirm the theory of top-down Europeanization in which policy implementation is understood as policy changes occurring at local level under increased European pressure. The regional authorities which are attributed a key role, function as policy entrepreneur and gather the municipalities to 'spread the word'. With only one intermediate, i.e. the regional authority, top-down Europeanization occurs in the most effective way. The Covenant has shown to be able to penetrate directly to the lowest levels of authority which are closest to the citizen, and as a result spread European norms and values. Initiatives like these strengthen the development of a 'European culture'.

The Covenant motivates municipalities to join by providing a range of facilities similar to horizontal networks. In order to find out whether horizontal interaction between the different signatories has been enhanced by joining the Covenant, this research poses the following question; are the network facilities offered by the Covenant of Mayors accessible to authorities joining the initiative? Are these facilities being used by the local authorities? Some main findings are noted. First, from the moment that joining the initiative was considered, up till the moment that measures are taken, the regional authority has played a crucial role in bringing together the different municipalities in the region, in convincing them to sign and in providing them the necessary political, technical and financial support. Most notable has been the technical support. By the cooperation between the University of Roskilde and the Region of Zealand in developing the EBI and the SEAP, the detailed requirements have been translated into a more understandable format and standardized forms for the local authorities' technicians. The Deputation of Barcelona has gathered overall, cross-municipal data on local energy consumption through regional service companies. Furthermore it has liberated resources for municipalities to hire an audit firm to complete the requirements from the CoMO. Second, continuity in political attention to the issue has been strengthened by the Covenant. Insights in energy consumption help in developing a long term strategy. The EBI informs the authority about the current state of play and by doing so forms a basis for the development of a long-term planning (the SEAP). Such a planning is essential to effective environmental policy. Political pressure resulting from joining the Covenant provides 'a stick behind the door' to remind any official or politician, any time now or in the future, about the sustainable goals the municipality has set out to reach. This has been made possible because the decision of the municipalities to sign the Covenant has been based on unanimity. Third, availability of information has led to cooperation. Information exchange is seen as a key facility of horizontal cooperation (Bulkeley, 2006) and should lead to policy learning (Kern & Bulkeley, 2009). Nevertheless, the analysis here concludes the opposite. In the Covenant's structure, information and experiences on projects and best-practices are made widely available by the use of digital databases and e-mail based newsletters. These sources have not been consulted by the signatories. However, information exchange has formed a strong basis for cooperation, where process information regarding a specific project is seen to be valuable, rather than solely showing the final result. The experienced municipalities of Zealand acknowledge that however they have engaged in cooperation on similar issues before, the Covenant has brought them even closer. Fourth, in cooperation between signatories policy learning occurs. In literature, policy learning can take place in two forms. On the one hand, actors can learn from each other on the technicality of measures on how to tackle a policy problem (Jactenfuchs, 1999; Sabatier & Jenkins-Smith, 1999; Bulkeley 2006). On the other hand, learning can alter the underlying norms and understanding of a policy issue (Betsill & Bulkeley, 2004; Ward *et al.*, 2004, Toly, 2008). In the case of the Covenant, a new

understanding amongst the respondents can be noted. In the Barcelonan municipalities, the Covenant has shown that tacking climate change and investing in renewable energy technologies brings economic benefits. Finally, the Covenant has succeeded in raising awareness. Increased attention to climate change and sustainable energy is given in numerous departments, different from the obvious; e.g. the department on energy or the environment.

The dual character of the Covenant stimulating vertical interaction and horizontal cooperation, aims at effective local climate- and energy governance. The question remains whether the strategy has led to the desired result. In order to answer that, a third research question has been answered: do new policies and other measures aiming at increased energy efficiency and/or renewable energy use have been designed as a result of joining the Covenant of Mayors? Due to joining the Covenant, a firm basis for sustainable energy projects is established. Although this analysis has not been able to prove a causal relationship between the launch of new measures and joining the Covenant, it has demonstrated its supporting role in the initiation and implementation of different initiatives. It provides the local authorities with a label of 'climate actor' due to the backing of European support. This label has proven to be useful when addressing external actors, when applying for financial resources through European funding schemes and when increasing awareness by the use of sensitization campaigns.

Overall, the Covenant has had a positive impact on local climate governance. Finally, some findings can be attributed to the regions separately. In the province of Barcelona, the development of the Emission Baseline Inventory (EBI) and consequently the long term energy action plan (the SEAP) has resulted in local insights in energy use and functions as a crucial first step in taking action. The Deputation of Barcelona has played a significant role in liberating the necessary financial resources to support this process. The municipalities in the region of Zealand have a history in developing adequate policies to tackle climate change and install renewable energy installations. Although the municipalities do not lack the knowledge to develop effective measures, they were merely focused on energy resources and possibilities inside their municipal borders with knowledge already available. Signing the Covenant has broadened their scope and increased cooperation amongst the authorities in the region. The regional authority has played a facilitation role in getting these municipalities to join forces.

Depending which perspective one uses to look at the future of the Covenant, one outlook looks bright, while in the other, the Covenant is made to fail. In Barcelona, the major stumbling blocks are politically related. Politicians from the local, provincial, regional or national level are blamed of being

risk-averse and not willing to invest in renewable energy because uncertainty prevails on the return of invested capital. On the contrary, authorities in Zealand regard the commitment as binding.

Although much of this network is to be examined, this study has succeeded in providing a first insight in the functioning of this relatively new structure. Based on these new understandings, some recommendations are made for future research on municipal networks in general, and the Covenant in specific. First, future evaluations should provide continues insight in the functioning and effectiveness of the Covenant as a governance structure. As the respondents have repeatedly mentioned, a lack of feedback from the CoMO to the authorities on local progress has possible detrimental consequences for the future of the initiative. The effectiveness should therefore continue to be monitored. Additionally, the results can be used by the CoMO to improve their services to the signatories. Second, in times of a waning influence of the European Institutions on its citizens, initiatives such as the Covenant can have a direct effect on spreading a 'European culture'. The Eurobarometers have shown a decreasing trust in European policy makers. Initiatives such as the Covenant increase acceptance of the broad public for European policies and related norms and values. By doing so, they play an important role in re-establishing trust and interest in the European level. Third, the normative component of policy learning should be further examined. The impact of top-down Europeanization by by-passing national governments can have significant impacts on the power of Member States. Finally, bottom-up interaction has only been partially addressed. Further studies are necessary to understand the role of local authorities in territorial interest representation.

Cited works

Adger, W. (2005). Scales of governance and environmental justice for adaptation and mitigation of climate change. *Journal of International Development, 13*(7), 921-31.

Alber, G., & Kern, K. (2008). Governing Climate Change in Cities: Modes of Urban Climate Governance in Multi-level Systems.

Allen, D. (2005). Cohesion and the Structural Funds. In H. Wallace, W. Wallace, & M. Pollack, *Poliy Making in the European Union* (pp. 213-241). Oxford: Oxford University Press.

Allman, L., Fleming, P., & Wallace, A. (2004). The Progress of English and Welsch local authorities in addressing climate change. *Climate Change, 9*, 271-83.

Bache, I. (2002). Europeanization: A Governance Approach. *UNSPECIFIED*.

Bache, I. (2008). *Europeanization and Multi-level Governance.* Lanham: MD: Rowman & Littlefield.

Bache, I., & Flinders, M. (2004). *Multi-level Governance.* Oxford: Oxford University Press.

Bai, X. (2007). Integrating global environmental concerns into urban management: the scale and readiness arguments. *Journal of Industrial Ecology, 11*, 15-29.

Baumgartner, F., & Jones, B. (1993). *Agendas and Instability in American Politics.* Chicago, IL, US: University of Chicago Press.

Beichelt, T. (2008). Dimensions of Europeanization. In F. Bafoil, & T. Beichelt, *Européanisation. D'Quest en Est. Paris: L'Harmattan.* Coll. Logiques Politiques Paris: L'Harmattan.

Bernet, F. (2012, February 28). Head of Department on Environment and Sustainability, Santa Coloma de Gramenet. (J. Lambregs, Interviewer)

Bernet, F. (2012, February 28). Head of Environment and Sustainability, Santa Coloma de Gramenet. (J. Lambregs, Interviewer)

Betsill, M. (2001). Mitigating climate change in US cities: opportunities and obstacles. *Local Environment, 6*, 393-406.

Betsill, M. M., & Bulkeley, H. (2004). Transnational Networks and Global Environmental Governance: The Cities for Climate Protection Program. *International Studies Quarterly 48*, 471-493.

Betsill, M., & Bulkeley, H. (2006). Cities and the multilevel governance of global climate change. *Global Governance, 12*, 141-59.

Betsill, M., & Bulkeley, H. (2007). Looking back and thinking ahead: a decade of cities and climate change research. *Local Environment, 12*, pp. 447-56.

Beyers. (2008). Policy issues, organisational format and the political strategies of interest organisations. *West European Politics, 5*(2), 211-240.

Bicknell, J., Dodman, D., & Satterthwaite, D. (2009). *Adapting Cities to Climate Change: Understanding and Addressing the Development Challenges.* London: Earthscan.

Biermann, F., & Pattberg, P. (2008). Global environmental governance: taking stock, moving forward. *Annual Review Environmental Resources, 33*, pp. 277-94.

BioenergyPromotion. (2013). *Bioenergy Promotion*. Opgeroepen op January 23, 2013, van Bioenergy Promotion: http://bioenergypromotion.net/project/overview

Birkland, T. (2007). Agenda Setting in Public Policy. In F. Fischer, G. Miller, & M. Sidney, *Handbook of Public Policy Analysis.* Boca Raton: Taylor & Francis.

Birkmann, J., Garschagen, M., Kraas, F., & Quang, N. (2010). Adaptive Urban governance: new challenges for the second generation of urban adaptation strategies to climate change. *Sustainability Science, 5*, 185-206.

Börzel, T. A. (1999). Towards Convergence in Europe? Institutional Adaptation to Europeanization in Germany and Spain. *Journal of Common Market Studies, 37*(4), 573-596.

Boudreau, J. (2007). The centrality of urban politics in a global era. *Paper presented at the 2007 Annual Meeting of the American Political Science Association.*

Bourne, A. (2007). Regional Europe. In M. Cini, *European Union Politics* (pp. 287-303). Oxford: Oxford University Press.

Bouwen, P. (2009). The European Commission. In D. Coen, & J. Richardson, *Lobbying in the European Union* (pp. 19-38). Oxford: Oxford University Press.

Breukers, S. (2007). *Institutional capacity building for wind power. A geographical comparison. .* Ph.D. Thesis, University of Amsterdam.

Brown, H. (2009). Climate change and Ontario forests: prospects for building institutional adaptive capacity. *Mitigation and Adaptation Strategies for Global Change, 14*, 513-36.

Bulkeley, H. (2006). Urban Sustainability: learning from best practice? *Environment and Planning A, 38*, 1029-1044.

Bulkeley, H. (2010). Cities and the Governing of Climate Change. *Annual Review of Environment and Resources, 35*, 229-253.

Bulkeley, H., & Betsill, M. (2003). *Cities and Climate Change: Urban Sustainability and Global Environmental Governance.* London: Routledge.

Bulkeley, H., & Betsill, M. (2005). Rethinking sustainable cities: multilevel governance and the 'urban' politics of climate change. *Environmental Politics, 14*(1), 42-63.

Bulkeley, H., & Kern, K. (2006). Local government and climate change governance in the UK and Germany. *Urban Studies, 43*, 2237-59.

Bulkeley, H., & Newell, P. (2010). *Governing Climate Change.* London: Routledge.

Bulkeley, H., Schroeder, H., Janda, K., Zhao, J., & Armstrong, A. e. (2009). Cities and climate change: the role of institutions, governance and urban planning. *Presented at the 5th Urban Res. Symp. 2009: Cities Clim. Change: Responding to Urgent Agenda.* Marseille.

Buller, J., & Gamble, A. (2002). Conceptualizing Europeanisation. *Public Policy and Administration Special Issue Understanding the Europeanization of Public Policy, 17*(2), 4-24.

Bulmer, S., & Burch, M. (2001). The Europeanization of Central Government: the UK and Germany in historical Institutionalist Perspective. In G. a. Schneider, *The Rules of Integration: Institutional Approaches to the Study of Europe* (pp. 73-98). Manchester: Policy Research Unit Series Manchester University Press.

Bulmer, S., & Radaelli, C. (2004). The Europeanization of National Policy. *Queen's paper on Europeanisation*.

Byrne, J., Glover, L., Toly, N. J., & Wang, Y. (2004). Urban choices in the greenhouse, Paper presented at the International Solar Cities Conference.

Byrne, J., Hughes, K., Rickerson, W., & Kurdgelashvili, L. (2007). American Policy conflict in the greenhouse: divergent trends in federal, regional, state, and local green energy and climate change policy. *Energy Policy, 35*(9), 4555–4573.

Byrne, J., Hughes, K., Toly, N. J., & Wang, Y. (2006). Can cities sustain life in the greenhouse? *Bulletin of Science, Technology, and Society, 26*(2), 84-95.

Byrne, J., Toly, N. J., Hughes, K., Glover, L., & Wang, Y. (2005). Urban choices in the greenhouse. In J. Kim, *Solar Cities for a Sustainable World: Proceedings of the International Solar Cities Congress 2004.* Daegu, Korea: Research Institute for Energy, Environment, and Economy.

Cadevall Artigues, M. (2012, March 9). Head of Technical Services of Environment and Sustainablity. (J. Lambregs, Interviewer)

Carmichael, L. (2005). Cities in the Multi-level Governance of the European Union. In M. Haus, H. H., & M. Stewart, *Urban Governance and Democracy. Leadership and Community Involvement.* London: Routledge.

Castanyer, G. (2012, February 29). Environmental Technician of Sant Quirze del Vallès. (J. Lambregs, Interviewer)

Chiu, N. (2010, August). *The role of City-network in the Environmental discourse.* Opgeroepen op January 9, 2012, van European Consortium of Political Research: http://www.ecprnet.eu/databases/conferences/papers/854.pdf

Collier, U. (1997). Local Authorities and climate protection in the European Union: Putting subsidiarity into practice? *Local Environment, 2*, 39-57.

Committee of the Regions. (2013). *Structured dialogue.* Opgeroepen op February 7, 2013, van EU - Committee of the Regions: http://cor.europa.eu/en/activities/structured-dialogue/Pages/structured-dialogue.aspx

Corfee-Morlot, J., Kamal-Chaoui, L., Donovan, M., Cochran, I., A., R., & P.J., T. (2009). Cities, Climate Change and Multilevel governance. *OECD Environmental Working Papers 14.*

Covenant of Mayors. (2009, June 25). *Covenant of Mayors to fight CO2 emissions.* Opgeroepen op January 9, 2012, van Pilot Cities New Towns: http://www.pilotcities.eu/index.php?option=com_content&view=article&id=14:covenant-of-mayors-to-fight-co2-emissions&catid=9:activities

Covenant of Mayors. (2011, September 28). *The Covenant at-a-glance.* Opgeroepen op October 4, 2011, van The Covenant of Mayors: http://www.eumayors.eu/about/covenant-of-mayors_en.html

Covenant of Mayors. (2013, January 22). *Covenant Coordinators*. Opgeroepen op January 22, 2013, van Covenant of Mayors: http://www.covenantofmayors.eu/about/covenant-coordinators_en.html

Cucurull, D. (2012, March 7). Manager of Environment Services of the County Council of Barcelona. (J. Lambregs, Interviewer)

Danske Kommuner. (2012). *Solrod Kommune.* Opgeroepen op April 30, 2012, van Danske Kommuner - Borgmester Fakta: http://www.danskekommuner.dk/Borgmesterfakta/Ny_struktur/Region-Sjalland/Solrod-Kommune/

Dawson, R. (2007). Re-engineering cities: a framework for adaptation to global change. *Philosophical Transactions of the Royal Society A, 365*, 3085-98.

Dodman, D. (2009). Blaming cities for climate change? An analysis of urban greenhouse gas emissions inventories. *Environment and Urbanization, 21*, 185-201.

EIB. (2012, January). *European Local ENergy Assistance: FAQ - Programme development support from ELENA.* Opgeroepen op April 25, 2012, van European Investment Bank: http://www.eib.org/attachments/documents/elena_faq_en.pdf

Eising, R. (2004). Interest Groups of the European Union. In M. Cini, *European Union Politics.* Oxford: Oxford University Press.

Ercole, E., Walters, M., & Goldsmith, M. (1997). Cities, Networks, Euregions, European Offices. In M. Goldsmith, & K. Klausen, *European Integration and Local Government.* Cheltenham: Edward Elgar.

European Commission. (1992, July 29). TREATY ON EUROPEAN UNION (92/C 191/01). *Official Journal C 191*.

European Commission. (1995). An Energy Policy for the European Union. *COM (95) 682 final*.

European Commission. (2001, July 25). European Governance. A White Paper. *COM (2001)*(428 final).

European Commission. (2008). *Covenant of Mayors.* Opgeroepen op October 19, 2011, van Climate Action - Energy for a Changing world: http://ec.europa.eu/energy/climate_actions/mayors/doc/mayors_covenants_en.pdf

European Commission. (2012, September 10). *The EU cliate and energy package.* Opgeroepen op February 8, 2013, van European Commission on Climate Action: http://ec.europa.eu/clima/policies/package/index_en.htm

Evans, B., Joas, M., Sundback, S., & Theobald, K. (2005). *Governing Sustainable Cities.* London: Earthscan.

Finnemore, M., & Sikkink, K. (1998). International norm dynamics and political change. *International Organization, 52*(4), 887–917.

Flockhart, T. (2010). Europeanization or EU-ization? The transfer of European Norms across Time and Space. *Journal of Common Market Studies, 48*(4), 787-810.

Füssel, H. (2008). *The risks of climate change: a synthesis of new scientific knowledge since the finalization of the IPCC Fourth Assessment Report (AR4).* Washington DC.: Background note to the World Bank Development Report 2010.

Generalitat de Catalunya. (2008). *Catalonia's policy on climate change.* Opgeroepen op 1 25, 2012, van Europe's World: http://www.europesworld.org/NewEnglish/Home_old/Article/tabid/191/ArticleType/Article View/ArticleID/20382/Cataloniaspolicyonclimatechange.aspx

Giddens, A. (2009). *The Politics of Climate Change.* Cambridge: Polity Press.

Goetz, K. H., & Hix, S. (2000). Europeanised Politics? European Integration and National Political Systems. *West European Politics Special Edition, 23*(4).

Goetz, K. H., & Meyer-Sahling, J.-H. (2008, June 30). The Europeanisation of national political systems: Parliaments and executives. *Living Reviews in European Governance, 3*(2).

Goldsmith, M. (2003). Variable geometry, multi-level governance: European integration and subnational government in the new millenium. In K. Featherstone, & C. Radaelli, *The Politics of Europeanization* (pp. 112-133). Oxford: Oxford University Press.

Gore, C., & Robinson, P. (2009). Local government response to climate change: our last, best hope? In H. Selin, & S. VanDeveer, *Changing Climates in North American Politics: Institutions, Policymaking and Multilevel Governance* (pp. 138-58). Cambridge: MA: MIT Press.

Granberg, M., & Elander, I. (2007). Local governance and climate change: reflections on the Swedish experience. *Local Environment, 35*, 537-48.

Greenwood, J. (2011). Actors of the Common Interest? The Brussels Offices of the Regions. *European Integration, 33*(4), 437-451.

Gupta, J. (2007). The multi-level governance challenge of climate change. *Environmental Sciences, 4*(3), 131-7.

Gustavsson, E., Elander, I., & Lundmark, M. (2009). Multilevel governance, networking cities, and the geography of climate-change mitigation: two Swedish examples. *Environment and Planning, C 27*, 59-74.

Hajer, M. (1995). *The politics of Environmental Discourse: Ecological Modernisation and the Policy Process.* Oxford: Oxford University Press.

Hansen, P. D. (2012, May 5). Head of Nature and Environment, Department on Technology and Environment of Sorø Municipality. (J. Lambregs, Interviewer)

Hansen, P. D. (2012, May 5). Head of Nature and Environment, Department on Technology and Environment of Soroe Municipality. (J. Lambregs, Interviewer)

Hansen, R. (2012, April 12). Project Coordinator at Solrød Municipality. (J. Lambregs, Interviewer)

Heinelt, H., & Niederhafner, S. (2008). Cities and organized interest intermediation in the EU multi-level system. *European Urban and Regional Studies*, 173-187.

Héritier. (2001).

Hix, S. (2005). *The Political System of the European Union.* Palgrave MacMillan.

Hjerpe, M., & Linner, B. (2007). Mapping synergies between climate change and world trade agreements at different scales, Paper resented at the Annual Meeting of the International Studies Association 48th Annual Convention.

Hodson, M., & Marvin, S. (2009). 'Urban Ecological Security': a new urban paradigm? *International Journal of Urban and Regional Research, 33*, 193-215.

Hoffman, M. (2011). *Climate Governance at the Crossroads: Experimenting with a Global Response.* New York: Oxford University Press. In Press.

Hoffmann, M. J. (2007). My norm is better than your norm: contestation and norm dynamics, Paper presented at the.

Holgate, C. (2007). Factors and actors in climate change mitigation: a tale of two South African cities. *Local Environment, 12*, 471-84.

Hooghe, L., & Marks, G. (2003). Unravelling the Central State, but How? Types of Multi-level governance. *American Political Science Review, 97*(2), pp. 233-43.

Howell, K. (2002). Developing Conceptualizations of Europeanization and European Integration: Mixing Methodologies. *ESRC Seminar Series/ UACES Study Group on the Europeanization of British Politics.* 'Elmfield', Northumberland Road, Sheffield S10 2TU.

Howell, K. (2004). Developing Conceptualisations of Europeanization: Synthesising Methodological. *Queen's Papers on Europeanization No 3/2004*.

Hrbek, R. (2000). Das Subsidiaritätsprinzip in der EU. Bedeutung und Wirkung nach dem Vertrag von Amsterdam. In *Jahrbuch des Föderalismus 2000. Föderalismus, Subsidiarität und Regionen in Europa* (pp. 510-31). Europäisches Zentrum für Föderalismus-Forschung: Baden-Baden: Nomos.

Hunt, A., & Watkiss, P. (2007). Literature review on climate change impacts on urban city. *Working paper ENV/EPOC/GSP(2007)10/FINAL.* Paris: Organisation.

ICLEI. (2011, September 27). *ICLEI Climate Program.* Opgeroepen op September 29, 2011, van ICLEI - Local Governments for Sustainability: http://www.iclei.org/index.php?id=800

Ingebritsen, C. (2002). Norm entrepreneurs: Scandinavia's role in world politics. *Cooperation and Conflict, 37*(1), 11-22.

International Energy Agency. (2008). *World Energy Outlook 2008.* Paris: IEA.

Jactenfuchs, M. (1999). *International Policy-making as a learning process?* Alderschot, Hants: Avebury.

Jensen, N. P. (2012, April 11). Environmental Administrator of the Ringsted Kommune. (J. Lambregs, Interviewer)

John, P. (2000). The Europeanization of sub-national governance. *Urban Studies, 37*, pp. 877-894.

Jollands, N. (sd). Cities and energy: a discussion paper. *Oranisation for Economic Cooperation and Development International Conference on Competitive Cities and Climate Change*.

Jordans, A., & Greenaway, J. (1998). Shifting Agendas, Changing Regulatory Structure and the "New" Politics of Environmental Pollution: British Coastal Water Policy 1955-1995. *Public Administration, 76*, 669-694.

Kassim, H. (2005). The Europeanization of Member State Institutions. In S. Bulmer, & C. Lequesne, *The Member States of the European Union.* Oxford: Oxford University Press.

Keck, M. E., & Sikkink, K. (1999). Transnational advocacy networks in international and regional politics. *International Social Science Journal 51(159)*, 89-101.

Keck, M., & Sikkink, K. (1998). *Activists Beyond Borders: Advocacy networks in International Politics.* Ithaca, NY: Cornell University Press.

Kern, K. (2001). Transnationale Städtenetzwerke in Europa. In E. Schröter, *Empirische Policy-und Verwaltungsforschung. Lokale, nationale, und internationale Perspektiven.* Opladen: Leske & Budrich.

Kern, K. (2007). When Europe Hits City Hall: The Europeanization of Cities in the EU Multi-level System. *Binennial Conference of the European Studies Association.* Montreal.

Kern, K. (2010, June 23-26). Climate Governance in the EU Multi-level System: The Role of Cities. 21. Porto, Portugal.

Kern, K., & Bulkeley, H. (2009). Cities, Europeanization and multi-level governance: governing climate change through transnational municipal networks. *Journal of Common Marketing Studies, 47*, 309–32.

Kern, K., Johnson, T., & Pristupa, A. (2012). Climate Governance in Multi-level Systems: Comparing the European Union, the United States, and China. In J. Meadowcroft, & I. (. Weibust, *Beyond Bottom Up and Top Down: Multilevel Environmental Governance Today in Europe and North America.* Edward Elgar.

Keukeleire, S., & MacNaughtan, J. (2008). *The Foreign Policy of the European Union.* New York: Palgrave Macmillan.

Kiel, C. (2011). How Transnational Advocacy Networks Mobilize. *Josef Korbel Journal of Advanced interntational Studies*(Volume 3), 77-101.

Kingdon, J. (2003). *Agendas, Alternatives and Public Policies.* New York: Longman.

Knill, C., & Lehmkuhl, D. (1999). How Europe Matters. Different Mechanisms. *European Integration online Papers (EIoP) 3(7)*.

Knodt, M. (2011). Strategies of Territorial and Functional Interests: Towards a Model of European Interest Intermediation? *European Integration, 33*(4), 419-435.

Koehn, P. (2008). Underneath Kyoto: emerging subnational government initiatives and incipient issue-bundling opportunities in China and the United States. *Global Environmental Politics, 8*, 53-77.

Kousky, C., & Schneider, S. H. (2003). Global climate policy: will cities lead the way? *Climate Policy, 3*, 359–372.

Ladrech, R. (1994). Europeanization of Domestic Politics and Institutions: The Case of France. *Journal of Common Market Studies, 32*(1), 69-88.

Lambregs, J. (2010). *The role of Cefic during the decision-making process of REACH: An effectiveness-evaluation.* Leuven: Katholieke Universiteit Leuven.

Lasco, R., Lebel, L., Sari, A., Mitra, A., Tri, N., & etal. (2007). *Integrating Carbon Management into Development Strategies of Cities - Establishing a Network of Case Studies of Urbanisation in Asia Pacific. Final Report for APN project 2004-07-CMY- Lasco.* Kobe, Japan: Asia-Pacific Network on Global Change Resources.

Le Galés, P. (2002). *European Cities. Social Conflicts and Governance.* Oxford: Oxford University Press.

Lebel, L., Garden, P., Banaticla, M., Lasco, R., Contreras, A., & etal. (2007). Management into the development strategies of urbanizing regions in Asia: implications of urban function, form, and role. *Journal of Industrial Ecology, 11*, 61-81.

Lebel, L., Huaisai, D., Totrakool, D., Manuta, J., & Garden, P. (2007). A carbon's eye view of urbanization in Chiang Mai: improving local air quality and global climate protection. In R. Lasco, L. Lebel, A. Sari, A. Mitra, & e. a. Tri NH., *Integrating Carbon Management into Development Strategies of Cities - Establishing a Network of Case Studies of Urbanisation in Asia Pacific. Final Rep. for APN project 2004-07-CMY-Lasco* (pp. 98-124). Kobe, Japan: Asia-Pacific Netw. Glob. Change Res.

Ligeti, E., Penney, J., & Wieditz, I. (2007). *Cities preparing for climate change: a study of six urban regions.* Toronto: Clean Air Partnership.

Lindseth, G. (2004). The Cities for Climate Protection Campaign (CCPC) and the framing of local climate policy. *Local Environment: The International Journal of Justice and Sustainability, 9*(4), 325–336.

Lund, M. (2012, April 10). Climate coordinator at Næstved Kommune. (J. Lambregs, Interviewer)

M., B. M. (2001). Mitigating Climate Change in U.S. Cities: Opportunities and Obstacles. *Local Environment, 6*, 393-406.

Marciacq, F. (2010). *Causal and Constitutive Mechanisms of Europeanisation.* Opgeroepen op October 6, 2011, van Australian Political Studies Association: http://apsa2010.com.au/full-papers/pdf/APSA2010_0102.pdf

Martinez Barchino, T. (2012, March 6). Head of the Environmental Department of Santa Perpetua de Mogoda. (J. Lambregs, Interviewer)

Martins, R., & Ferreira, L. (2010). Enabling climate change adaptation in urban areas: a local governance approach. *INTERthesis, 7*(2), 241-75.

Martins, R., & Ferreira, L. (2011). Climate Change action at the city level: tales from two megacities in Brazil. *Management of Environmental Quality: An International Journal, 22*(3), 344-57.

Mazey, S., & Richardson, J. (2006). Interest Groups and EU policymaking: Organisational logic and venue shopping. In J. Richardson, *European Union: Power and Policy Making* (pp. 247-265). New York: Routledge.

Mintrom, M. (2000). *Policy Entrepreneurs and School Choice.* Wahington DC: Georgetown University Press.

Monni, S., & Raes, F. (2008). Multilevel climate policy: the case of the European Union, Finland and Helsinki. *Environmental Science Policy, 11*, 743-55.

Monstadt, J. (2007). Urban governance and the transition of energy systems: institutional change and shifting energy and climate policies in Berlin. *International Journal of Urban and Regional Research, 31*, 326-43.

Morera Marce, M. (2012, March 1). Councillor on Economic City Planning of the municipality of Rubí. (J. Lambregs, Interviewer)

Morera Marce, M. (2012, March 1). Economic City Planning, municipality of Rubí. (J. Lambregs, Interviewer)

Moser, C. (2009). Whether our levers are long enough and the fulcrum strong? Exploring the soft underbelly of adaptation decisions and actions. In W. Adger, I. Lorenzoni, & K. O'Brien, *Adapting to Climate Change: Thresholds, Values and Governance* (pp. 313-34). Cambridge: Cambridge University Press.

Murie, L. (2012, March 2). Technician of the department on Environment, Polinya. (J. Lambregs, Interviewer)

Naturfredningsforening . (2012, March). *Klimakommuner.* Opgeroepen op April 26, 2012, van Danmarks Naturfredningsforening : http://www.dn.dk/klimakommuner

Newell, P. (2000). *Climate for Change: Non-state actors and the global politics of the Greenhouse.* Cambridge: Cambridge University Press.

Niebuhr, T. (2012, April 12). Klimamedarbejder Climate & Sustainability, Roskilde Commune. (J. Lambregs, Interviewer)

Niederhafner, S. (2008). *Europäische Städte im Mehrebenensystem der EU. Eine vergleichende Untersuchung der Einflussnahme kommunaler Akteure auf europäischer Ebene anhand der beiden pan-euroäischen Kommunalverbände Eurocities and RGRE. Dissertation TU Darmstadt.*

North, P. (2009). Eco-localisation as a progressive response to peak oil and climate change - a sympathetic critique. *Geoforum doi:10.1016/j.geoforum.2009.04.013. In press*.

OECD. (2008). *Competitive cities in a changing climate: introductory issue paper.* Milan: Presented at the Organisation for Economic Cooperation and Development International Conference on Competitive Cities and Climate Change.

OECD. (2009). *oecd.org.* Opgeroepen op January 9, 2012, van Cities, Climate Change and Multilevel Governance: http://www.oecd.org/dataoecd/30/35/44232263.pdf

Okereke, C., Bulkeley, H., & Schroeder, H. (2009). Conceptualizing climate governance beyond the international regime. *Global Environmental Politics, 9*, 58-78.

O'Riordan, T., & Jäger, J. (1996). *Politics of Climate Change.* London: Routledge.

Parry, M., Canziani, O., Palutikof, J., van der Linden, P., & Hanson, C. (2007). *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the IPCC.* Cambridge: Cambridge University Press.

Parry, M., Palutikof, J., Hanson, C., & Lowe, J. (2008). Squaring up to reality. *Nature Reports Climate Change, 2*, 68-70.

Parzen, J. (2009, July). *Lessons learned: creating the chicago climate action plan*. Opgeroepen op July 1, 2012, van Chicago Climate Action: http://www.chicagoclimateaction.org/filebin/pdf/LessonsLearned.pdf

Pedersen, A. (2012, May 9). Head of the Climate and Energy Project at Lolland Kommune. (J. Lambregs, Interviewer)

Pierre, J., & Peters, B. (2000). *Governance, Politics and the State.* Houndmills: Macmillan.

Pol Gili, G., & Soldevilla i Garcia, I. (2012, February 28). Project Engineers at Barcelona's Energy Agency. (J. Lambregs, Interviewer)

Pollack, M. (2005). Theorizing the European Union: International Organization, Domestic Polity, or Experiment in New Governance? *Annual Review of Political Science*, 357-98.

Portney, K. (2003). *Taking Sustainable Cities Seriously: Economic Development, the Environment, and Quality of Life in American Cities.* Cambridge: MA: MIT Press.

Puppim de Oliveira, J. (2009). The implementation of climate change related policis at the subnational level: an analysis of three countries. *Habitat International*, 253-59.

Qi, Y., Ma, L., Zhang, H., & Li, H. (2008). Translating a global issue into local priority: China's local government response to climate change. *Journal of Environment and Development, 17*, 379-400.

Radaelli, C. M. (2000). Whither Europeanization? Concept Stretching and Substantive Change. *European Integration online Papers (EIoP), 4*.

Rasmussen, B. (2012, April 18). Sustainable Development Manager / Coordinator of Sustainable Region Zealand. (J. Lambregs, Interviewer)

Rechlin, S. (2004). Die deutschen Kommunen im Mehrebenensystem der Europäischen Union – Betroffene Objekte oder aktive Subjekte? *WZB Discussion Paper SP IV 2004-101, Berlin*.

Repetto, R. (2006). *Punctuated Equilibrium and the Dynamics of US Environmental Policy.* New Haven, CT, US: Yale University Press.

Risse, T., Cowles, M. G., & Caporaso, J. (2001). Europeanization and Domestic Change: Introduction. In M. G. Cowles, J. Caporaso, & T. Risse, *Transforming Europe: Europeanization and Domestic Change* (pp. 1-20). Ithaca, NY: Cornell University Press.

Risse, T., Cowles, M. G., & Caporaso, J. (2001). Europeanization and Domestic Change: Introduction. In T. Risse, M. G. Cowles, & J. Caporaso, *Transforming Europe. Europeanization and Domestic* (pp. 1-20). Ithaca/London: Cornell University Press.

Robinson, P., & Gore, C. (2005). Barriers to Canadian municipal response to climate change. *Canadian Journal of Urban Research, 14*(1), 102-20.

Rockström, J., Steffen, W., Noone, K., Persson, A., Chapin, F., Lambin, E., et al. (2009). A safe operating space for humanity. *Nature, 461*, 472-5.

Romero Lankao, P. (2007). How do local governments in Mexico City manage global warming? *Local Environment, 12*, 519-35.

Rosamond, B. (2007). New Theories of European Integration. In M. Cini, *European Union Politics.* Oxford: Oxford University Press.

Rosenzweig, C., Solecki, W. D., & Hammer, S. A. (2011). *Climate Change and Cities: The First Assessment Report of the Urban Climate Change Research Network.* Cambridge: Cambridge University Press.

Rutland, T., & Aylett, A. (2008). The work of policy: actor networks, governmentality, and local action on climate change in Portland, Oregon. *Envrionment and Planning, D 26*, 627-46.

Sabatier, P., & Jenkins-Smith, H. (1999). The advocacy coalition framework: an assessment. In P. Sabatier, *Theories of the Policy Process: Theoretical lenses on Public Policy* (pp. 117-166). Boulder, CO: Westfield Press.

Sanchez-Rodriguez, R., Seto, K., Simon, D., Solecki, W., Kraas, F., & Laumann, G. (2005). Science plan: urbanization and global environmental change. *IHDP Report No. 15, International Human Dimensions Programme on Global Environmental Change (IHDP).*

Sassen, S. (1994). *Cities in a World Economy.* Thousand Oaks, CA: Pine Forge.

Sassen, S. (2004). Local Actors in Global Politics. *Current Sociology, 52*(4), 1-25.

Satterthwaite, D., Huq, S., Pelling, M., Reid, H., & Lankao, P. (2007). *Adapting to climate change in urban areas: the possibilities and constraints in low- and middle-income nations, Discussion Paper No. 1 .* London: International Institute for Environment and Development (IIED).

Sattertwaite, D. (2008). Cities' contribution to global warming: notes on the allocation of greenhouse gas emissions. *Environment and Urbanization, 20*, 539-49.

Sbragia, A. (2004). Key Policies. In E. Bomberg, & A. Stubb, *The European Union: How does it work?* (pp. 111-135). Oxford: Oxford University Press.

Schmalz-Bruns, R. (2002). The normative desirability of participatory democracy. In P. g.-l. experience, *Heinelt, H.; et al.* (pp. 59-74). Opladen: Leske + Budrich.

Schreurs, M. (2008). From the bottom up: local and subnational climate change politics. *The Journal of Environment and Development, 17*, 343-55.

Schreurs, M. A., & Tiberghien, Y. (2007, November). Multi-Level Reinforcement: Explaining European Union Leadership in Climate Change Mitigation. *Global Environmental Politics, 7*(4), 19-46.

Serracanta, J. (2012). (J. Lambregs, Interviewer)

Serracanta, J. (2012, March 8). Councillor for Environment and Sustainability of the municipality of Manresa. (J. Lambregs, Interviewer)

Seto, K., Sánchez-Rodríguez, R., & Fragkias, M. (2010). The new geography of contemporary urbanization and the enrionment. *Annual Review of Environment and Resources, 35*, 167-94.

Slaughter, A.-M., & Hale, T. (2010). Transgovernmental Networks and Emerging Powers. In A. S. Alexandroff, & A. F. Cooper, *Rising states, rising institutions : challenges for global governance* (pp. 48-62). Washington D.C.: Waterloo, Ont.

Slocum, R. (2004). Consumer citizens and the Cities for Climate Protection Campaign. *Environment and Planning A, 36*(5), 763–782.

Solar Ordinances. (2004, April). *What is a solar thermal ordinance?* Opgeroepen op January 30, 2013, van Solar Thermal Ordinances: http://www.solarordinances.eu/SolarOrdinances/AboutSolarOrdinances/tabid/64/Default.aspx

Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Averyt, K., et al. (2007). *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.* Cambridge: Cambridge University Press.

Stern, N. (2006). *Stern review on the economics of climate change.* London: HM Treas./Cabinet Off.

Sugiyama, N., & Takeuchi, T. (2008). Local policies for climate change in Japan. *Journal of Environment and Development, 17*, 424-41.

Taylor, P. J. (2001). Being economical with the geography. *Environment and Planning A, 33*, 949–954.

Taylor, P. J. (2004). *World City Network: A Global Urban Analysis.* New York: Routledge.

Toly, N. (2008). Transnational municipal networks in climate politics: from global governance to global politics. *Globalizations, 5*, 341-59.

UN. (2011, October 31). *United Nations, Department of Economic and Social Affairs.* Opgeroepen op January 9, 2012, van World Population Prospects, the 2010 Revision: http://esa.un.org/wpp/Other-Information/faq.htm

UNFCCC. (2010, October). *Status of Ratification of the Kyoto Protocol.* Opgeroepen op October 4, 2011, van United Nations Framework Convention on Climate Change: http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php

UNSPECIFIED. (2001, July 25). European Governance - A White Paper. COM (2001) 428 final, 25 July 2001. [EU Commission - COM Document]. *COM (2001)*(428 final).

Wallace, H. (2000). Europeanisation and Globalisation: Complementary or Contradictory Trends? *New Political Economy, 5*(3), 369-382.

Ward, N., Donaldson, A., & Lowe, P. (2004). Policy framing and learning the lessons from UK's foot and mouth disease crisis. *Environmental and Planning C: Government and Policy, 22*, 291-306.

Ward, S., & Williams, R. (1997). From Hierarchy to Networks? Sub-central Government and EU Urban Environmental Policy. *Journal of Common Market Studies, 35*, 439-464.

Wessels, B. (1999). European Parliament and Interest Groups. In H. Schmitt, & J. Thomassen, *Representation and Legitimacy in the European Union.* Oxford: Oxford University Press.

While, A., Jonas, A., & Gibbs, D. (2010). From sustainable development to varbon control: eco-state restructuring and the politics of urban and regional development. *Transactions of the Institute of British Geographers, 35*, 76-93.

Wilbanks, T., & Kates, R. (1999). Global change in local places: how scales matters. *Climatic Change, 43*, 601-28.

Wilbanks, T., Lankao, P., Bao, M., Berkhout, F., Cairncross, S., Ceron, J., et al. (2007). Industry, settlement and society. In M. Parry, O. Canziani, J. Palutikof, P. van der Linden, & C. Hanson, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the IPCC* (Vol. 2007, pp. 357-90.). Cambridge: Cambridge University Press.

Wolsink, M. (2007). Planning of renewables schemes: Deliberative and fair decision-making on landscape issues instead of reproachful accusations of non-cooperation. *Energy Policy, 35*, 2692-2704.

Wong. (2007). Foreign Policy. In P. Granziano, & M. Vink, *Europeanization: New Research Agendas* (pp. 321-336). Houndmills; New York: Palgrave Macmillan.

Xandri, R. (2012, February 27). Secretary of the municipalities of Avià and Castellar del Riu. (J. Lambregs, Interviewer)

Zahariadis, N. (2003). *Ambiguity and Choice in Public Policy. Political decision making in Modern Democracies.* Washington DC: Georgetown University Press.