Environnement urbain
Urban Environment

Why do cities get involved in climate governance? Insights from Canada and Italy
L'implication municipale dans la gouvernance climatique : que nous apprennent les cas de Québec et de Gênes ?

Emiliano Scanu and Geneviève Cloutier

Volume 9, 2015

URI: https://id.erudit.org/iderudit/1036221ar
DOI: https://doi.org/10.7202/1036221ar

See table of contents

Publisher(s)

Institut National de Recherche Scientifique Centre Urbanisation Culture et Société

ISSN

1916-4645 (digital)

Explore this journal

Cite this article

Scanu, E. & Cloutier, G. (2015). Why do cities get involved in climate governance? Insights from Canada and Italy. *Environnement urbain / Urban Environment*, *9*. https://doi.org/10.7202/1036221ar

Article abstract

Cities the world over are tackling climate change, even when their national governments are largely inactive in this area. Which factors trigger their implication? Through which kinds of policies do cities become engaged in this issue? Based on previous studies and on urban and multilevel governance theoretical frameworks, this article suggests some answers. An original analytical grid is developed and used to compare two cases in Canada and Italy. The results confirm that the way in which municipalities respond to climate change largely depends on their local and multilevel contexts, as well as on the potential benefits of climate action.

Emiliano Scanu et Geneviève Cloutier

Why do cities get involved in climate governance? Insights from Canada and Italy

Introduction

1 The crucial role played by urban centers with respect to the climate issue is by now widely recognized (Bulkeley, 2010 ; The World Bank, 2010 ; UN-Habitat, 2011). Throughout the world, more and more cities are becoming aware of their potential contributions in this area and are engaging to make those potentials a reality. Since about two decades ago, this municipal involvement has been attracting the attention of researchers and specialists from different domains (*cf*. Bulkeley, 2010 ; Betsill and Bulkeley 2007). A recurrent question in these studies has been, "To the extent that municipal engagement is a voluntary step rather than one imposed by other levels of government, why do municipalities become involved ?"

2 A number of authors have examined elements liable to encourage or discourage involvement (*cf*. Alber and Kern, 2008 ; Bulkeley and Betsill, 2003 ; Holgate, 2007 ; Pitt and Randolph, 2009 ; Sippel and Jenssen, 2009). Generally speaking, cities engage with the climate issue when they foresee possible benefits in other areas, for example through energy efficiency measures or flood risk reduction. Although one can notice a certain degree of homogeneity in urban climate efforts, planning instruments, modes of governance, actors involved and actions undertaken can deviate substantially from one context to another, and this, depending on a variety of factors and conditions.

3 The present study thus aims to contribute to this body of work, by focusing on "why" and "how" two cities have approached management of climate change. Further, it strives to advance this line of reflection by elaborating an analytical grid that permits to grasp and compare factors that could trigger involvement in climate governance, which we will refer to as "implication factors", as well as the modalities assumed by this involvement. It is thus possible to establish a clear link between the particular urban context and the form of municipal involvement.

4 We begin by situating municipal management of climate change within the theoretical framework of urban and multilevel climate governance. Next, following the findings of similar studies on urban responses to climate change, we introduce a grid that represents and organizes the empirical dimensions of urban climate governance. This grid is then applied to the study of two separate initiatives in Quebec City, Canada, and Genoa, Italy. Firstly, we aim to understand why these two cities became engaged, respectively, in an adaptation plan and in an energy action plan. Secondly, our goal is to document how these two initiatives were implemented, in order to illuminate their differences and similarities : are these two coastal cities of comparable size and located in developed countries driven by similar motivations ? How do the North American context for one and the presence of European institutions for the other influence their involvement ? Our comparison reveals that local modes of institutional and political organization, as well as the possibility of horizontal or vertical interaction between important players in the climate debate, orient both governance strategies and local responses to them. These findings allow us to highlight the main aspects and dynamics of urban climate governance as well as to propose some different courses of action for municipalities motivated in addressing this urgent matter in concrete ways.

Urban climate governance beyond the city : multilevel actors and processes on an urban stage

5 “Urban climate governance refers to the ways in which public, private, and civil society actors and institutions articulate climate goals, exercise influence and authority, and manage urban climate planning and implementation processes” (Anguelovski and Carmin, 2011 : 169). Although qualified as “urban”, the governance referred to here is not limited to the local scale.

Rather, “in an era of growing internationalization, one of the most crucial features of urban governance and politics lies in their nested relations to a host of institutions and other processes at national and other, broader levels” (Sellers, 2005 : 421). In order to illuminate this extra-urban dimension, we speak in terms of "multilevel governance", a term that is significant in three respects.

6 Firstly, multilevel governance represents an object of study. With respect to climate-related planning, it refers to the approaches used by municipalities in implementing adaptation or mitigation measures that are influenced and financed by various levels and actors (Betsill and Bulkeley, 2006 ; Bulkeley, 2010 ; Gustavsson *et al.*, 2009). As such, although these climate policies are implemented at the city-level, and although the city is the object of these policies, the parties involved and the processes at work are "multilevel" in character. This can be seen, for instance, in the operations of municipal networks like Energy-Cities, Partners for Climate Protection (PCP) or Cities for Climate Protection (CCP) (Bulkeley and Betsill, 2003 ; Alber and Kern, 2008 ; Kern and Bulkeley, 2009 ; Vasi, 2007). In the case of the CCP campaign, member cities lobby for access to national funds without having to directly engage with their respective states. They are also represented by the CCP at the United Nations Framework Convention on Climate Change (UNFCCC) talks (Betsill and Bulkeley, 2006).The relationship between the European Union and local governments further exemplifies this type of configuration (Ballesteros Torres and Doubrava, 2010). These multileveled relationships are not limited to the provision of funds and normative frameworks, but also involve displacement of authority and legitimacy toward the European Commission and mainland municipalities, because these bodies develop policies independently from national governments (Kern, 2010 ; Scanu, 2014).

7 Secondly, as a theoretical approach, the term "multilevel governance" directs our thinking beyond the locality and the state as exclusive frames of reference (Bulkeley and Betsill, 2003, 2005, 2013 ; Holgate, 2007), drawing attention instead to the complexity of the state institution. Hence, in adopting this approach, we understand the relationship between levels of government non-hierarchically, in order to grasp how a set of actors and institutions, situated at various levels, "are seeking to govern the climate through the city" (Bulkeley, 2010 : 233).

8 Finally, the notion of multilevel climate governance has a normative dimension that frames the battle against climate change as a multidimensional, "glocal" problem, insofar as it requires joint and coordinated efforts from local, regional, national and supranational bodies (Amundsen *et al.*, 2010 ; Corfee-Morlot, *et al.*, 2009 ; Gupta *et al.*, 2007). As Adger and colleagues (2005) remark of adaptation, actions that seem appropriate at a given scale may be inappropriate at another. For instance, purchase of household air conditioners constitutes an individual adaptation measure that can compromise energy availability on the national scale. In order to avoid unequal distribution of adaptation's costs and benefits, policies in this area should, in effect, take criteria of effectiveness, efficiency, equity and legitimacy into account.

9 The initiatives observed in Genoa and Quebec City can be appropriately defined as urban and multilevel processes of climate governance. We therefore approach these initiatives through a "multilevel lens", with the objective of identifying endogenous and exogenous elements triggering them.

The "hows" and "whys" of multilevel urban climate governance : an analytical grid

10 A heterogeneous ensemble of factors susceptible to trigger municipal implication has been identified by research on urban responses to climate change (*cf.* Bulkeley and Betsill, 2003 ; Sippel and Jenssen, 2009). Economic criteria, such as energy cost reduction or employment creation, generally constitute the point of departure for any given climate policy (Pitt, 2010). Decisive political levers include involvement of an influential politician or pressure from local actors (Holgate, 2007 ; Krause, 2011). Also important are institutional and informational factors including, for example, the presence/absence of a national action framework, access to knowledge about local vulnerabilities, and the capacity for maintaining multilevel collaborations (Alber and Kern, 2008 ; Vasi, 2007). Social factors such as intra-

and intergenerational equity and community development seem to be less influential (Kousky and Schneider, 2003 ; Sippel and Jenssen, 2009). Framing factors relate to how the climate issue is presented in and adapted to a particular context (Bulkeley and Betsill, 2003 ; Lindseth, 2004). Municipal engagement may be motivated by definitions framing climate change in terms of opportunity, as a local rather than a global issue, or as an imminent threat. Finally, there are ecological factors such as climate and geomorphological features of the city : being located in an area at risk of flooding, being often subject to heat waves or having already experienced dramatic weather events (even if these are not directly related to climate), can motivate a municipality to act (Amundsen *et al.*, 2010 ; Bulkeley, 2010 ; Roberts, 2009 ; Sippel and Jenssen, 2009).

11 With respect to these factors, two points must be made. Firstly, they rarely intervene in a pure and isolated manner. Instead, a relationship or fusion between them is likely to be at play where municipalities become active. Secondly, according to certain authors (Adger *et al.*, 2005 : 80 ; Wang, 2012 ; Zahran *et al.*, 2008a ; Zahran *et al.*, 2008b), the most determining factors seem to be societal (economic, political, institutional, etc.) rather than ecological (geographic position, average precipitation, climate, etc.). This does not mean that the latter do not count in the decision to act upon climate change, but that the societal arguments do tend to have more impact as determinant factors.

12 Here, we refer to those elements that incite a municipality's responses to climate-related risks while simultaneously justifying said responses as "implication factors". These factors may include ideas, material conditions, actors, or institutions. They are crucial entry-points to engagement in the climate issue, a step which means integration of adaptation and mitigation related criteria, norms, actions and ideas into decisions affecting urban governance and planning.

13 While asking "why" cities get involved is certainly important, asking "how" they do so is equally necessary. This latter question prompts us to identify elements distinguishing approaches taken in different contexts. In the pages that follow, we trace some of the paths urban climate governance has taken in terms of concrete measures and actions. These paths are comprised of the forms and dimensions of local climate management. In the form of an analytical grid, we shall present modes of climate governance, intervention sectors, urban planning tools, participating actors, and types of action undertaken.

14 Until very recently, measures to stabilize or slow global warming were more widespread than those geared toward adapting to a warmer climate (Bulkeley, 2010 ; de Perthuis *et al.*, 2010). However, it is now generally accepted that climate change will continue even if we attain the various greenhouse gas reduction targets that we have established (IPCC, 2014). This development surely contributes to the recent upsurge in interest for adaptation planning. Governments tend to prefer single modes of intervention, likely in part because achievement of objectives can be more clearly shown when single modes are employed (Klein *et al.*, 2005). Another part of the puzzle is likely the fact that mitigation strategies and adaptation strategies are often presented as mutually exclusive, although they would better be viewed as complementary (Biesbroek *et al.*, 2009 ; Dawson *et al.*, 2007). In fact, municipalities can deploy both approaches simultaneously, as in Venice where savings created through energy efficiency measures are invested directly into adaptation projects (Massetti *et al.*, 2007).

15 Further, the municipalities have different planning instruments at their disposal (e.g., adaptation plans, mobility plans, emissions reductions plans, etc.) and can target different sectors with the help of four modes of climate governance (*cf.* Alber and Kern, 2008 ; Bulkeley and Kern, 2006 ; Schroeder and Bukleley, 2009). "Self-governing" refers to management of municipal activities through actions such as purchasing green vehicles and retrofitting municipal buildings to reduce heating costs. This modality often represents the starting point of municipal engagement. "Governing through enabling" involves encouraging the intervention of public private partnerships as well as the diffusion of information, for example through manuals for architects and developers, or awareness raising campaigns. "Governing by provision" is characterized by actions aiming to furnish infrastructures or services, such as the installation of a tramway or the elaboration of new recycling programs. According to a

recent study of 100 global cities, this is the most frequently employed modality (Castán Broto and Bulkeley, 2013). Finally, "governing by authority" refers to use of regulation, such as the creation of restricted traffic areas, or the modification of zoning to prohibit construction in at-risk areas. This form of governance is generally given little consideration, both because it is perceived as illegitimate, particularly in less hierarchical political systems (Alber and Kern, 2009 : 23), and because it is seen as an impediment to private initiative (Schroeder and Bukleley, 2009 : 352).

16 With respect to areas of intervention, energy is generally the principal target of mitigation, in part because of the tangible benefits of energy efficiency, although intervention in the transport sector is also very common (Bulkeley, 2010 ; Castán Broto and Bulkeley, 2013 ; Sippel and Jenssen, 2009). On the other hand, planning is generally considered less, as it usually occurs via regulation. This observation partially explains the weak diffusion of adaptation planning measures (Adger *et al.*, 2005 : 79). Interventions in the waste management sector might include promotion of recycling, or installation of equipment for the transformation of waste into energy. Generally, municipalities control this sector directly (Gupta *et al.*, 2007 ; Massetti, 2007 ; Robinsons and Gore, 2005)

17 Finally, with respect to the participative dimension, urban climate governance unfolds with the support of a plurality of stakeholders (Juhola, 2013 ; Sippel and Jenssen, 2009). These include representatives from civil society, epistemic actors, private sector and the state (various levels of government). Although each party is both present and active, the instigators of climate initiatives are very frequently municipal governments (Castán Broto and Bulkeley, 2013 : 99).

18 In sum, the Analytical Urban Climate Governance grid (Table 1) is made up of two principal parts. The "why" treats the city's implication factors, while the "how" is composed of several dimensions, including the type of measure, the planning instruments, the sectors targeted, the modes of governance, the specific actions taken, and the intervening actors. With the help of this table, let us now see how Quebec City and Genoa are responding to climate change.

Table 1 - Urban climate governance analytical grid

Municipal involvement in climate governance (the why)
Ecological factors : geomorphological and climatic conditions Economic factors : funds and subventions, growth opportunities Institutional factors : normative frameworks and climate knowledge Political factors : political will to tackle climate change Social factors : social issues related to climate change Framing factors : how climate change is problematized
Dimensions of urban climate governance (the how)
Type of measures : adaptation and mitigation Type of planning instruments : adaptation plan, mobility plan, GHG reduction plan, urban master plan, etc. Concerned sectors : energy, transport, water, waste, etc. Modes of governance : self-governance, enabling, provision and authority Specific actions : renewal of municipal fleet, rezoning, recycling facilities, building regulations, awareness raising campaigns, etc. Involved actors : government actors, civil society actors, private sector and epistemic groups

The comparative study

19 Quebec City and Genoa are two cities of approximately 500,000 and 600,000 inhabitants, respectively. Beyond demographic similarities and a shared centrality of the service sector and of port activities, these two cities have similar climate management competencies (for Canada, *cf.* Jones, 2011 ; Robinson and Gore, 2005 ; for Italy, *cf.* Massetti *et al.*, 2007). Nonetheless, they possess distinct histories, cultures, institutions and climates. They are also distinguished by their very different political systems : the Canadian federal system for Quebec City as compared to the Italian regional system and multilevel European system for Genoa[1].

20 Given our decision to compare two different forms of implication (adaptation and mitigation) taking place in two distinct contexts, the reader might not be surprised to learn that the routes taken by Quebec City and Genoa diverge. Application of our grid illuminates the nature of these divergences, while showing how the climate issue is contextualized as a function of endogenous, or local, and exogenous, or multilevel, particularities of the two municipalities.

Notably, these two cases can be read as representative of similar initiatives taking place in North America and Europe.

21 This study is based on qualitative data, collected by three methods. We completed document analysis on materials such as media accounts, technical reports, websites, and plans, and we participated in conferences, workshops and events relating to the cases under examination. Finally, in the case of Genoa we completed our empirical base by conducting open-ended and semi-structured interviews with key informants, representatives of organisations and associations, members of research centers and elected officials[2]. It should be noted that the data sets concerning our two cases were collected independently, in the contexts of two distinct research projects that were pursuing similar ends. They were then reinterpreted using the grid developed here. As a result, this is an *a posteriori* comparison.

Adaptation in Quebec City

22 No major climate vulnerability marks Quebec City's landscape. Nonetheless, this city is characterized by important climatic variations during the year, with mean daily temperatures of air ambient ranging from -16.8°C in winter to +24.2°C in summer (Environment Canada, 2013). Its harsh winters vary in terms of duration and intensity. The major projected climate change effects for Quebec City and its region are the increase in mean temperatures (2.5°C to 3.8°C in winter ; 1.9°C to 3.0°C in spring and summer ; and 2.0°C to 3.1°C in fall) and changes in variability according to the seasons (Ouranos, 2010). Higher average precipitations are also anticipated in winter and spring, and this could affect the organization of municipal services (snow removal, sewage backflows, etc.) as much as the daily lives of residents.

23 Additionally, as an administrative entity, Quebec City has been actively pursuing and developing approaches to counteract climate change. It is a member of PCP, a partnership launched by the Federation of Canadian Municipalities. It also belongs to the international network of Local Governments for Sustainability (ICLEI). Since the 2000s, Quebec City has been elaborating mitigation and adaptation plans to address climate change.

24 In Canada, the environment file is shared between federal and provincial governments. The federation supports the activities of the provinces, which have a certain latitude to plan as a function of their contexts. Since 2006, the conservative party has considerably reduced resources allocated to the environment, showing an unfavourable bias that cannot help but constrain the environmental efforts of provincial and municipal governments (Jones, 2011 ; Stoett, 2009). Local administrations fall particularly victim to diminutive levels of federal recognition and assistance, and must redouble efforts to advance their environmental programming. Thus, the Canadian situation effectively illustrates the multileveled character of climate change management. In Quebec, municipalities can draw financial support from the provincial government in implementing mitigation or adaptation plans (Gouvernement du Québec, 2008). On the technical level, principal assistance comes from the Ouranos Consortium.

25 Quebec City has chosen to plan adaptation and mitigation strategies simultaneously. As is often the case though, the mitigation strategy came first. The mitigation action plan, released in 2004, exposed the city's accounting of its greenhouse gas emissions (GHG) and proposed interventions to reduce its emissions. Improvement of waste management and measures of energy efficiency were among the actions proposed (Ville de Québec, 2004). In 2010, Quebec City had reduced its GHG emissions of 11 900 t. in regard to the reference year of 2002.

26 The initial planning process regarding adaptation was launched in 2008 by Quebec City's Environmental Services (*Service de l'environnement de la ville de Québec*) (Ressources Naturelles Canada, 2010). The administration said it favored a proactive over a reactive approach, citing the potential to reduce any eventual climate-induced damages to municipal property and to avoid associated costs. In this sense, a certain opportunism motivated Quebec City's move.

27 The Environmental Services adaptation plan was developed with the objective of optimizing management practices that were in use. The aim was not to change everything or to start from zero ; an examination of current practices was realized in order to identify pre-existing

elements that were salient to adaptation. Said process was undertaken in consultation with municipal employees who were invited to draw attention to existing adaptation measures and to identify lacunae.

28 This procedure lends support to the idea that climate change adaptation is contingent upon a relatively low cost municipal engagement (Adger and Vincent, 2005). The costs of planning were assumed by the City of Quebec and were essentially associated with the human resources mobilized for the effort. A significant number of adaptation measures exist already and need only be prioritized or reinforced in order to foresee risks and consequently avoid repairing damages. For instance, raising awareness about more responsible use of drinking water during the summer could ultimately prevent drinking water shortages, forestalling the need to limit water consumption during dry periods. Water management issues, and particularly matters of drinking water availability and quality, are indeed Quebec City planning priorities. Ongoing quality control of source water upstream from filtration plants, and studies evaluating the risks to which this resource is exposed, are further adaptation measures included in the plan. These actions are generated by internal management, unsurprisingly, given that management of drinking water falls under public, local jurisdiction.

29 Though the self-governance privileged in Quebec City can be considered "soft" or "comfortable", it nonetheless remains a first step in putting adaptation on the agenda, and one which can act as a lever in two respects. On the one hand, integrating these measures into planning makes them priorities. On the other hand, drawing on the experience and knowledge of municipal employees stimulates empowerment and encourages adhesion to adaptation management measures. Similarly, a plan is in place to increase funds allocated to tracking the performance of municipal infrastructures such as landfill sites and snow deposits, in order to support new surveillance measures targeting the impacts of climate change. In a context where the frequency and strength of precipitation is expected to increase, such supplementary resources insure that the personnel concerned feel equipped to implement adaptation measures both efficiently and durably. Further, a budgetary increase signals that the issue is taken seriously by the municipal personnel as well as the population. In addition to these actions, Quebec City is planning enabling and regulation measures. These include subvention programs for the purchase of water-saving devices, creation of wildlife migration corridors to support natural migration of certain species, and specific zoning for flood prone areas with recurrence levels of 20 years or less. In the end, the adaptation plan elaborated by Environmental Services has a largely symbolic value, serving as it does to legitimate anticipated impacts of climate change in the territory. It portrays these impacts in terms of the competencies of Environmental Services and proposes possible avenues for adapting to them.

30 In April 2009, the Executive Council of Quebec City approved Environmental Services' planning process, simultaneously supporting extension of the procedure to the ensemble of municipal services. Consequently, a similar, second round of consultations was undertaken to create a broadened adaptation plan, which is presently being completed. This time, Quebec City was accorded financing through the “Climate Municipalities” program which is administrated by the provincial government (*Ministère du Développement durable, de l’Environnement, de la Faune et des Parcs*, henceforth, MDDEFP).

31 In this respect, Quebec City's adaptation planning initiative is largely based on a vertical collaboration with the MDDEFP. Provincial civil servants offered human and financial resources to civil servants on the municipal level, enabling internal completion of municipal consultation and planning processes. The provincial program provided funding, but also important benchmarks that helped to realize the plan while there is no sense of urgency on the part of the municipal government. This being said, the role of the Ouranos Consortium must also be underlined.

32 Ouranos, which unites university researchers and professionals from various disciplines, has effectively aroused the municipality's interest in adaptation planning. Indeed, it was following a 2006 presentation delivered by consortium representatives that Quebec City's civil servants initiated planning at Environmental Services (Ressources Naturelles Canada, 2010). The technical expertise of scientist and professional members was also called upon in the municipal

planning process as civil servants were informed of changes on the horizon for 2020, 2050 and 2080.

33 Available financial resources and knowledge together convinced civil servants, including senior executives, and municipal representatives it was time to embark on adaptation planning in order to prepare Quebec City for the conditions climate change threatens to impose. This opportunity held particular appeal insofar as it promised political and economic gains equalling the costs of its execution.

34 On the one hand, it was difficult to identify a systematic method to address the multidimensional and transversal issues of climate change adaptation. The project greatly relied on the individual will and competence of a couple of civil servants. Moreover, these latter would not always have consistent collaboration from their vis-à-vis in other municipal services. They lacked the administrative capacity to ensure the extension of the program in all municipal and social areas of Quebec City. As a result, the process is several years behind schedule. Furthermore, the monitoring and post-assessment of the plan was not foreseen throughout the process. It came at the end of the planning which is not optimal and will not help facilitate implementation.

Mitigation in Genoa

35 The city of Genoa is “sandwiched” between the coast and ranges of hills and mountains rising almost straight out of the sea, and it is also crossed by two rivers that descend directly from the mountains to the sea (MoG, 2010a : 7). Its climate is subtropical and Mediterranean with dry summers. Unlike many other Italian cities, rainfall in Genoa is almost always higher than the annual mean figure (MoG, 2010a : 10), which leads to frequent flooding of the rivers and makes this city one of the most vulnerable to heavy rainfall in Italy (Legambiente, 2012).

36 With respect to the governance, Genoa is embedded in the multitiered European system, at the intersection of several levels of government : the European Commission, the Italian state, the region of Liguria and the province of Genoa. Each level has varying degrees of influence over the Genovese municipality's approach to climate management. Commission’s directives and regulations have a major influence on the conduct of member states and regional and local governments. Indeed, it has been calculated that, on average, 80 % of the environmental laws of the Member States comes from this level (Schreurs, 2005 : 3).

37 In climate policy, the European Commission is widely recognized as a leader (Schreurs and Tiberghien, 2007). The climate-energy package is the main European policy on mitigation of climate change and rational use of energy. Composed of several directives (e.g., directive 2009/28/EC on the promotion of renewable energies and energy efficiency, directive 2009/29/EC on the improving and extending of the greenhouse gas emission allowance trading scheme, etc.), this action plan aims to achieve three goals by 2020 : reducing greenhouse gas emissions by 20 % ; increasing the production of renewable energy to reach 20 % of the energy mix ; increasing energy efficiency by 20 % (*cf.* Bailey *et al.*, 2011 ; EC, 2007, 2008 ; Hayden, 2011 ; Vogler, 2013). Among the planned initiatives, there is also the Covenant of Mayors (CoM), namely the "translation" of the climate-energy package at the local level (see later in the text).

38 Nonetheless, application of European directives is neither automatic nor without controversy, as demonstrated by the fierce opposition of Italy's recent Berlusconi administration regarding the European climate-energy package (to which Italy nonetheless adheres). As a result of this political opposition, Italy lacks a comprehensive, binding mitigation strategy (O.C.D.E., 2013 ; D’Orazio and Poletti, 2009), and it has recently met its reduction objectives mainly thanks to economic recession (Scanu, 2014). At lower levels of government, we find the region of Liguria and the province of Genoa, two territorial entities that have long been engaged with environmental and climate issues, particularly through promotion of renewable energy, green economy and green public procurement. These governments support their constituent municipalities in establishing actions consistent with their climate engagements. Even with the support of these territorial bodies, however, Genoa is unfavourably situated in terms of its efforts to curb climate change, due to the inaction of a key actor : the central government.

39 The City of Genoa inaugurated its commitment to counteracting climate change by signing on to the CoM initiative. Spearheaded by the European Commission following its adoption of the climate and energy package, the CoM aims to support local governments in their implementation of sustainable energy policies (Ballesteros Torres and Doubrava, 2010). Its framing document is the Sustainable Energy Action Plan (SEAP), which is elaborated by the convention's signatories to define their strategies for surpassing the GHG emissions reduction target of 20 % before the year 2020 (CoM, 2014a). The SEAP is comprised of three complementary approaches : clean energy production, energy efficiency and reduction of energy consumption.

40 The Genovese SEAP was approved unanimously by the municipal council in 2010. Given the importance of high-tech sector in the Genovese economy (Dixet, 2011), energy restructuring that comes with the SEAP is a major opportunity for the city : market potential for sustainable energy technologies are expected to be stimulated, enabling thereby consistent GHG emission reduction (MoG, 2010a : 22).

41 Five strategic programs are the basis of the SEAP and orient its goals and instruments : new methods of governance ; city of wellbeing ; creative city ; accessible city ; sustainable city. On the basis of these goals, as well as of the CoM GHG reduction targets, this plan projects emissions reduction of 23 % in various sectors, with particular attention to the residential and transport sectors, which are responsible for 42 % and 24 % of emissions, respectively. A total of 78 actions have been planned, including a resident permit parking policy, wind-farm installations, extension of the subway line, new building regulations, training for municipal administrators, retrofitting of heating systems, and so on. Crucially, in implementing the plan, local administrators foresee deployment of the entire spectrum of modes of urban climate governance within energy, transport, planning and waste management sectors. Notably, they will use governing by authority, which allows influencing of energy production and consumption simultaneously and quite directly. Although, as we have seen, municipalities typically shy away from this modality, the traditionally leftist orientation of Genoa as well as Italy's pronounced interventionist presence suggest that governing by authority might here be an effective means to the desired ends.

42 Genoa's commitment to the fight against climate change took form through a process of vertical and horizontal collaborations. Composition of the highly technical SEAP was achieved with the participation of three epistemic actors : the University of Genoa Research Center in Town Planning and Ecological Engineering (CRUIE), the Regional Energy Agency (*ARE Liguria*), and of the *Muvita Foundation*, a research center owned by the province of Genoa, which provided the emissions inventory. In addition, various stakeholders were consulted along the way, including environmental, consumer and professional associations, professional orders and unions (MoG, 2010b : 37). Whereas a political document such as an urban plan undergoes preliminary as well as follow-up consultations and public hearings, the technical nature of the SEAP called for more *ad hoc* participation. Nonetheless, a large number of public and private actors will be directly implicated in the implementation phases of the plan ; for each planned action, the SEAP clearly indicates "the actors involved or potentially involved". For instance, *Legambiente Liguria* and other environmental associations are responsible for training and assisting "solar purchasing groups" which are comprised of condominium residents. These groups exist to organize the installation of rooftop solar panels. On the other hand, companies that are members of the Builders Association of Liguria (ANCE-Assedil) are directly involved because they are concerned with the energy requalification of buildings.

43 In order to respect its multi-sector mitigation policy, Genoa has created the Office of Energy Planning (*Ufficio Pianificazione Energetica*), a transversal structure under the direct responsibility of the municipal council that is charged with coordinating the various municipal departments to create synergies to achieve the objectives of the plan (MoG, 2010b : 42). This commitment to fighting climate change is also highlighted by the municipality's intent to integrate the principles of sustainability, in particular the "energy variable" (MoG, 2010b : 74), into all aspects of urban development. Thus, the SEAP is not a subsidy plan but rather a framing document that orients Genovese urban governance for the years to come (MoG,

2010b : 40, 74). In this way, in Genoa as in other municipalities (Anguelovski and Carmin, 2011), climate change is being institutionalized ; ecological rationality is being integrated into urban development.

44 Several elements are at play in this process. Firstly, there are the contributions of the municipal councillor for the environment (who has been replaced by the new administration), an elected official who had long overseen ecological issues in political and scientific domains. Her influence, and the political will of the centre-left municipal council to which she belonged, proved key political factors in Genoa's involvement. In contrast, the instigating roles of public and private actors appear minor, as these stakeholders have only intervened since the municipality has become a Covenant signatory.

45 Secondly, the multisite, multilevel collaboration is significant. The elaboration of the SEAP was a predominantly technical process, but also a political one to the extent that the instigating factor was generated by a supranational, European body. Genoa doesn't appear to have shown any interest in the issue of climate change prior to joining the CoM. Thus, without a concrete commitment from Italy, the European Commission has acquired enormous sway, becoming the privileged and legitimate interlocutor, and this to the detriment of the national government. Two opposed factors emerge as essential to this development : inaction on the national level on the one hand, and European proactivity on the other. The fact that almost half the signatories to the CoM are Italian (2941 of 6178) (CoM, 2014b) supports this conclusion, particularly when contrasted with the French situation. The French national government requires municipalities of over 50,000 inhabitants to provide a Climate Action Plan, a document bearing a close resemblance to the SEAP (*cf.* Yalçin and Lefèvre, 2012). This requirement may well be linked to the diminutive number of French signatories to the Covenant : a mere 116.

46 The European Commission's propulsive role extends beyond the aspects cited above to the diffusion of an ecological modernization discourse (Scanu, 2015 ; Sezgin, 2013 ; Vogler, 2013). By way of its energy and climate policies, the old continent aims to modernize its economy in order to guarantee growth and energy security, to stimulate the creation of green employment, as well as to decrease atmospheric pollution and GHG emissions. Climate change is framed as an opportunity : the harmonization of economical and ecological concerns characterizing the mitigation approach promises a host of benefits. Translated to the local scale by the CoM, this discourse is increasingly influential among municipal authorities who are ever more concerned to make their cities globally attractive as well as competitive.

47 On the one hand, Genoa's adhesion to this initiative belongs to a larger process of economic and cultural restructuring that commenced some years ago with creation of urban renewal policies and promotion of the city as a center of innovation (Galdini, 2008 ; Gazzola, 2003 ; MoG, 2010b : 31). The latter element was ultimately geared toward attaining "smart city" status. Indeed, the implementation of the SEAP is a decisive step toward the goal of winning the European "Smart Cities" competition (MoG, 2010b : 55-59). Recent creation of the Genovese pillar of green business, which aims to assemble firms that might increase the competitiveness of the green economy, also moves in this direction.

48 On the other hand, the framing of the climate issue in ecological modernization’s terms allowed Genoa to easily involve urban actors in the SEAP project. That, insofar as climate change mitigation is depicted as an economically and socially feasible project, which can be profitable as required by economic actors, and environmentally sound as expected by civil society actors. This particular framing of the climate issue also explains why the municipality has no adaptation policy, despite being highly vulnerable to heavy precipitation and despite of the flood that in 2011 caused the deaths of six people and serious property damage (Legambiente, 2012). In this case, adaptation does not seems to be as *win-win* as mitigation.

49 In the case of Genoa, the European Commission's influence, as well the economies derived from energy efficiency and green growth, seem to constitute the most decisive implication factors. In terms of framing factors, technological and economic aspects of climate change predominate, symptomatic of the fact that technology is increasingly seen as the principal solution to the climate problem (Mancebo, 2011 ; Tellmann, 2012 : 14). That is also in line with ecological modernization approach to climate change, which is mainly based on

market mechanisms and technological fixes (Scanu, 2015 ; Sezgin, 2013). Political factors are also important, notably the center-left positioning of the municipal council and the municipal councillor for the environment's role as a policy entrepreneur. Finally, the case of Genoa supports the view that urban climate governance is a consistently technical, top-down process (Kousky and Schneider, 2003 : 361). In other words, it is initiated by public powers collaborating mainly with experts. The urban community intervenes further down the road.

Quebec City adaptation and Genoa mitigation compared

50 Quebec City and Genoa are two mid-sized cities evolving in two distinct political contexts. Each municipality has taken a different path to the fight against climate change (Table 2). Quebec City has been interested in this issue for some time, as evidenced by its emissions reduction plan for 2004-2010, and is presently integrating adaptation criteria into the ensemble of its corporate activities. In the case of Genoa, the recent signing of the CoM, together with the elaboration of the SEAP, marked its entry onto the climate scene.

51 In Genoa as in Quebec City, municipal administrators took advantage of informational resources made available by epistemic actors (a constant of urban climate policies). For Genoa, the groups were the Faculty of Engineering, the regional energy agency and the *Fondazione Muvita*. For Quebec City, the group concerned was the Ouranos Consortium which was also a "motivator" for the process. The consortium's role as a motivator is interesting. In fact, according to the relevant literature (Alber and Kern, 2008 ; Yalçin and Lefèvre, 2012), local governments typically requests contributions from experts after the decision is taken, rather than the reverse, that is, epistemic groups push local authorities to take action. In that sense, Ouranos acts as a boundary organization (Guston, 2001).

Table 2 - Dimensions of urban climate governance in Quebec City and Genoa (the how)

	Quebec City	Genoa
Type of measures	Adaptation	Mitigation
Type of planning instruments	Adaptation plan	Energy plan
Concerned sectors	Environmental services	Energy ; transport ; planning ; waste management
Modes of governance and examples of specific actions	Self governing : monitoring of sensitive infrastructures (landfills, snow deposits, etc.) ; additional resources to administer, monitor and adapt ; new methods to reduce sediment pollution Enabling : water restriction campaigns ; flood emergency response plans ; subsidy programs for the purchase of water aerators Provision : protection and development of wildlife habitats Authority : flood protection zones ; river banks protection plan	Self-governing : renewal of the municipal fleet ; energy management of the properties owned by local housing agency Enabling : incentives for installation of hybrid solar roof panels by private companies ; information desks ; communication Provision : extension of the subway line ; recycling facilities ; transportation hubs ; environmental islands Authority : resident permit parking policy ; building regulations ; road transport planning regulation ; wind-farm and mini-hydropower installations
Involved actors	State actors : municipality of Quebec ; government of Quebec Epistemic actors : Ouranos Consortium	State actors : Genovese municipality and province ; Liguria region ; European Commission ; service companies completely or partially owned by the municipality Civil society : environmental, consumer and citizens' associations ; trade unions Private and market actors : professional associations and orders ; chamber of commerce

		Epistemic actors : University of Genoa CRUIE ; regional energy agency ; Muvita Foundation

52 Genoa and Quebec City each intend to deploy a broad range of climate governance modes, although the latter initiative is most marked by self-governing. This divergence is likely best explained by the fact that Quebec City's adaptation process is still in a more experimental phase, and the actors involved are limited to the municipality and the Ouranos Consortium. The municipality is therefore addressing what it has the knowledge and tools to handle most effectively : the activities of its personnel. The transversality of measures contained in the Genovese SEAP, the heterogeneity of participant actors, as well as the presence of an institutional path dependency in the form of a long history of state interventionism, contribute to the multiplicity of modes deployed and sectors concerned in this European case (from self-governance to governance by authority).

53 Similarities and differences coexist in the factors determining the implication of our two municipalities (Table 2). First, in each case, motivations endogenous to the municipality were decisive. Indeed, Quebec City's decisions came directly from its municipal administration. The financial and technical support from the provincial government's Climate Municipalities program came afterward. This is equally true of the Genovese context where we additionally find the support of a policy entrepreneur, namely, the councillor for the environment. In both cases, the decision to get involved in adaptation planning or in mitigation projects is not mainly determined by an obligation coming from the national government level. Rather, there is a framing of climate change as a local issue, as a topic with the opportunity to lead to an increase in local governments' control over their resources in general (Bulkeley, 2010 ; Hoffmann, 2011).

54 Secondly, in the same direction, both cities frame addressing climate change as an economic opportunity. In fact, economic criteria are crucial in both cases. In Genoa, savings are engendered by better management of energy supply and demand. Here, the way the European climate policy framed the climate issue also played a major role. Thus, mitigation becomes an opportunity for a European city betting on growth and technological innovation to compete on the global scene. In Quebec City, on the other hand, investments are made today to avoid future losses that could be occasioned by climate disequilibrium. This observation about the importance of the economic criteria is consequent with the literature. However, specifically in the case of Quebec City, the anticipative adaptation is original, as municipalities usually take action reactively, which is to say only following a nefarious event (Adger *et al.*, 2005 : 77 ; Amundsen *et al.*, 2010 : 285, 286 ; Sippel and Jenssen, 2009 : 14). A further advantage is that acquired adaptation expertise could be "sold" to other municipalities. However, since Quebec City administration took time to dedicate resources to the specific file of climate change adaptation, this advantage was lost to other local governments in Canada (Vancouver, for example). The expertise it will have to give to others would rather be on the pitfalls to avoid and on how to avoid them. One example of the latter would be to take the time to mobilize partners in the different municipal services and to expose them the full aims and scopes of the project.

55 Lack of political will, as well as the absence of a comprehensive and binding action framework from the respective central governments represents a major factor. If this political lacuna is characteristic of the United States, the same is true of Italy and of Canada (D'Orazio and Poletti, 2009 ; Jones, 2011 ; Scanu, 2014 ; Selin and VanDeever, 2009). This fact seems to have pushed the two municipalities to take initiative autonomously. Genoa's privileged and legitimate interlocutor is to be found on the supranational scale, in the European Commission through the CoM. In Quebec City's case, on the other hand, the provincial government, which has long invested in addressing the climate problem, provided the principal support and stimulus for adaptation planning. Our two cases testify to the emergence of multilevel systems of governance. This emergence is relatively circumscribed in Quebec City, limited to the municipal and provincial levels. By way of contrast, it is quite spread out in Genoa, extending to municipal, provincial, regional and supranational levels. This trend confirms what

Bulkeley (2010) has referred to as "urban climate governance beyond the city." In this way, urban centers are becoming hubs of climate related policies and discourses.

56 Finally, the political "right-left" divide does not appear to be significant. Quebec City, with its municipal council situated right of centre, and Genoa, historically a left leaning city, have both become involved in strategizing around climate change. That being said, their approaches arguably diverge along right-left lines insofar as adaptation is characterized by a certain "territorial egotism" whereas mitigation promises to benefit the planet as a whole.

Table 3 - Quebec City and Genoa implication in urban climate governance (the why)

	Quebec City	Genoa
Implication factors	Benefits derived from risk reduction (economic) Selling adaptation policy expertise (economic) Financing offered by the Quebec government through the “Climate-Municipalities” program (economic) Ouranos pressure and influence (institutional, informational) Political will of municipal administration (political) Canadian government inaction (political, institutional)	Benefits from better management of energy supply and demand (economic) Green economy growth and jobs-creation (economic, framing) European Commission influence through the Covenant of Mayors (political, institutional, framing) Italian government inaction (political, institutional) Environmental councillor as policy entrepreneur (political) Political will of municipal administration (political) Ecological modernization discourse (framing)

57 The processes initiated by Quebec City and Genoa are still in their actuation phases. In Genoa, recent municipal elections resulted in a council sitting further to the left than the one that preceded it. A possible consequence of this move may be a change of focus to issues such as those related to social equality and security, matters which could be addressed through an adaptation policy. In Quebec City, we expect a broadening of the adaptation plan to the ensemble of urban activities and actors, and eventually to the whole of the metropolitan community. Yet, the local administration has missed a great opportunity to be at the forefront of pro-active and engaged municipalities on the matter of climate change governance.

Conclusion

58 In this article, we have employed the theoretical and conceptual frameworks of urban and multilevel climate governance in order to analyse two initiatives that have taken place in Quebec City and Genoa. By referring to studies that have focused on municipal responses to climate change, we have defined the concept of "implication factors" and then presented a grid that accounts for these factors and other elements of urban climate governance, including measures, instruments, modes, sectors, actors and actions. This grid has enabled a comprehensive perspective on the "whys" and "hows" of Quebec City's and Genoa's climate engagements.

59 Our results confirm many tendencies already noted by the relevant literature. First, it seems clear that urban climate governance is essentially a top-down and technology-driven process (Mancebo, 2011 ; Scanu, 2015), in which the urban community takes on a secondary, if nonetheless substantial role, as seen particularly in Genoa. In that sense, these initiatives do not spring from the will and needs of the urban community, but from the interests of municipal authorities and the knowledge of epistemic groups. That is probably one of the reasons why the dimension of environmental justice is often absent in urban climate governance, despite the centrality of this issue in global climate debates and governance (Bäckstrand and Lövbrand, 2007 ; Beck, 2010 ; Schlosberg, 2013). Both Québec’s Adaptation Plan and Genoa’s SEAP are indeed mainly motivated by economic factors, rather than by concerns related to intra- and intergenerational equity (e.g. social factors), like reducing risk for vulnerable urban social groups or mitigating climate change for the whole global community.

60 Second, consistent with the findings of other researchers (Adger et al., 2005 ; Wang, 2012 ; Zahran *et al.*, 2008), we have observed that the societal elements of climate change are the most determinant of municipal involvement. However, ours results add a nuance to this statement. In fact, we have also observed that ecological elements exert a certain influence, in particular with respect to the ways a municipality concretizes its involvement as it targets some sectors over others, according to its objectives. Genoa targets the residential and transport sectors that are responsible for more than half of municipal emissions. In contrast, the sector targeted by Quebec City is that relating to water management, mostly due to the climatic situation of the city. Indeed, this sector is usually critical to adaptation measures. In this regard, one can argue that societal factors are more influential on the "why" of urban climate governance, whereas ecological factors are more influential on the "how". Thus, we argue that further studies addressing the connection between the "why" and "how" of urban climate governance can help to improve the analytical grid presented here as well as understanding what types of governance modalities (e.g. planning instruments, actors involved, targeted sectors, etc.) are associated with different implication factors (e.g. economic, ecological, framing, etc.). For instance, social factors are likely to lead to adaptation measures aiming at reducing vulnerability of disadvantaged groups, the latter usually living in areas at risk (Schlosberg, 2013), whereas framing factors as ecological modernisation discourses are likely to appeal to both economic actors and environmental organisations.

61 Third, our results shown the need as well as the advantage of adopting a "multilevel stance", that is to say, to consider simultaneously the endogenous and exogenous factors that trigger and steer urban climate governance (Anguelovski and Carmin, 2011 ; Alber and Kern, 2008 ; Bulkeley, 2010). The urban climate governance analytical grid becomes thus an important tool both in this respect and concerning the international comparison. In fact, this grid allowed us to present two cases in parallel and thus identify the differences and analogies between them.

62 This grid can be seen as a reading tool which, stemming from a review of the relevant literature on the same topic, categorises in a systematic way the main aspects and dynamics of urban and multilevel climate governance. On the one hand, it invites the researcher to focus on implication factors, that is, the reasons behind a municipality's decision to engage in climate action. On the other hand, it systematizes the different means and steps of climate action, from the general (type of measure) to the particular (specific action). It is thus through this categorisation that this grid helps to understand urban climate governance in a systematic and comparative way, and thus to broaden knowledge on how and why urban centers respond to global environmental change. This grid could usefully be applied as a reading tool to study other European and North American cases.

63 In practical terms, our results shown that multilevel governance has become the *sine qua non* condition of urban climate initiatives, as also noted by many studies (Adger et al., 2005 ; Alber and Kern, 2008 ; Betsill, and Bulkeley, 2006 ; Gupta *et al.*, 2007 ; Kern, 2010 ; Scanu, 2014 ; Vasi, 2007). In fact, if it is true that cities have powers and competencies, these do not allow cities to address the full range of climate change aspects. For example, only national governments have the authority to set fuel standards for transportation or to regulate the energy market in a way that fosters emissions reduction. Furthermore, national or supranational frameworks can, through the provision of funds and knowledge, dramatically encourage urban climate actions as well as help cities in adopting mitigation or adaptation plans. Without multilevel collaboration and coordination, urban climate initiatives are likely to remain incomplete or insufficiently robust.

64 Québec City's and Genoa's cases have shown that municipalities address the climate issue when they foresee benefits of different nature, mainly economic and political, but rarely environmental ones. In other words, cities get involved in climate governance when climate action is framed in win-win terms. This statement suggests that urban climate policies should be associated with complementary priority issues such as reduction of energy costs, modernization of infrastructures, creation of a "green city" image, as well as improving quality of life and citizen participation in urban affairs. This is a matter of attaining what Giddens (2009) refers to as "political and economic convergence", that is, of superimposing the fight

against climate change onto other issues that decision makers have on their agendas. Operating along these lines, cities could play a decisive, productive role in the unfolding of the fight against climate change by instantiating the resilient low-carbon society profile.

Bibliographie

Adger, W. N. and K. Vincent (2005). "Uncertainty in adaptive capacity", *C. R. Geoscience*, vol. 337, p. 399-410.

Adger, W. N., N. W. Arnell and E. L. Tompkins (2005). "Successful adaptation to climate change across scales", *Global Environmental Change*, vol. 15, p. 77-86.

Alber, G. and K. Kern (2008). "Governing climate change in cities : Modes of urban climate governance in multilevel systems", *Proc. Organ. Econ. Co-Op. Dev. Conf. Competitive Cities and Climate Change*, p. 1–30. Paris, OECD.

Amundsen, H., F. Berglund and H. Westskog (2010). "Overcoming barriers to climate change adaptation —a question of multilevel governance ?", *Environment and Planning C*, vol. 28, p. 276-289.

Anguelovski, I. and J. Carmin (2011). "Something borrowed, everything new : Innovation and institutionalization in urban climate governance", *Current Opinion in Environmental Sustainability*, vol. 3, p. 169-175.

Bäckstrand, K. and E. Lövbrand (2007). "Climate governance beyond 2012 : competing discourses of green governamentality, ecological modernization and civic environmentalism", in : M. E. Pettenger (ed.) *The social construction of climate change : Power, knowledge, norms, discourses*, Bodmin, Ashgate, p. 123-148.

Ballesteros Torres, P. and R. Doubrava (2010). "The Covenant of Mayors : Cities leading the fight against the climate change", in M. van Staden and F. Musco (eds), *Local governments and climate change*, New York, Springer, p. 91-98.

Beck, U. (2010). *World at Risk*, Malden, Polity.

Betsill, M. and H. Bulkeley (2006). "Cities and the multilevel governance of global climate change", *Global Governance*, vol. 12. p. 141-159.

Betsill, M. and H. Bulkeley (2007). "Looking back and thinking ahead : A decade of cities and climate change research", *Local Environment*, vol. 12, no. 5, p. 447-456.

Bailey, I., A. Gouldson, and P. Newell (2011). "Ecological modernisation and the governance of carbon : A critical analysis", *Antipode*, vol. 43, no. 3, p. 682-703.

Biesbroek, G. R., R. J. Swart and W. G. M. van Der Knaap (2009). "The mitigation-adaptation dichotomy and the role of spatial planning", *Habitat International*, vol. 33, p. 230-237.

Bulkeley, H. (2010). "Cities and the governing of climate change", *Annu. Rev. Environ. Resour.*, vol. 35, p. 229-253.

Bulkeley, H. and M. Betsill (2003). *Cities and climate change*, New York, Routledge.

Bulkeley, H. and M. Betsill (2005). "Rethinking sustainable cities : Multilevel governance and the "urban" politics of climate change", *Environmental Politics*, vol. 14, no. 1, p. 42-63.

Bulkeley, H. and M. Betsill (2013). "Revisiting the Urban Politics of Climate Change", *Environmental Politics*, vol. 22, no. 1, p. 136-154.

Bulkeley, H. and K. Kern (2006). "Local government and the governing of climate change in Germany and the UK", *Urban Studies*, vol. 43, no. 12, p. 2237-2259.

Castán Broto, V. and H. Bulkeley (2012). "A survey of urban climate change experiments in 100 cities", *Global Environmental Change*, vol. 23, p. 92-102.

Corfee-Morlot, J., L. Kamal-Chaoui, M. G. Donovan, I. Cochran, A. Robert and P.-J. Teasdale (2009). "Cities, Climate Change and Multilevel Governance", *OECD Environmental Working Papers*, no. 14, OECD publishing, OECD.

CoM (Covenant of Mayors) (2014a). "About the covenant", http://www.eumayors.eu/about/covenant-of-mayors_en.html, accessed June 9, 2014.

CoM (Covenant of Mayors) (2014b). Signatories. http://www.eumayors.eu/about/signatories_en.html, accessed June 9, 2014.

Dawson, R. J., J. W. Hall, S. Barr, M. Batty, A. Bristow, S. Carney, S. Evans, A. Ford, J. Köhler, M. Tight and C. Walsh (2007). "A blueprint for the integrated assessment of climate change in cities",

Tyndall Centre for Climate Change Research, Norwich, Working Paper 104, http://www.tyndall.ac.uk/sites/default/files/wp129.pdf, accessed June 9, 2014.

de Perthuis C., S. Hallegatte and F. Lecocq (2010). "Économie de l'adaptation au changement climatique", Conseil économique pour le développement durable, Ministère Français de l'Écologie, de l'Énergie, du Développement durable et de la Mer, http://www.developpement-durable.gouv.fr/IMG/pdf/001-3.pdf, accessed June 9, 2014.

Dixet (Club d'Imprese Tecnologiche Avanzate) (2011). "Genova 2021. Il ruolo strategico della tecnologia", http://www.dixet.it/PDF/Progetto_Genova2021.pdf, accessed June 9, 2014.

D'Orazio, A. and C. Poletti (2009). "The Italian Energy policy : Changing priorities", *European Review of Energy Markets*, vol. 3, no. 1, p. 1-30.

EC (European Commission) (2007). "Combating Climate Change. The EU Leads the Way", http://bookshop.europa.eu/ en/combating-climate-change-pbNAAB07125/, accessed July 18, 2014.

EC (European Commissiokn) (2008). "20 20 by 2020. Europe's climate change opportunity. COM (2008) 30 final". http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0030:FIN:en:PDF, accessed July 18, 2014.

Environment Canada (2013). "1981-2010 Climate Normals & Averages", http://climate.weatheroffice.gc.ca/climate_normals/index_f.html, accessed June 9, 2014.

Galdini, R. (2008). *Reinventare la città. Strategie di rigenerazione urbana in Italia e in Germania*, Milano, Franco Angeli.

Gazzola, A. (2003). *Trasformazioni urbane. Società e spazi di Genova*, Napoli, Liguori Editore.

Giddens, A. (2009). *The politics of climate change*, Malden, Polity Press.

Gouvernement du Québec (2008). "Le Québec et les changements climatiques. Un défi pour l'avenir, Plan d'action 2006-2012", http://www.mddep.gouv.qc.ca/changements/plan_action/2006-2012_fr.pdf, accessed June 9, 2014.

Gupta, J., K. van Der Leeuw and H. de Moel (2007). "Climate change: a "glocal" problem requiring "glocal" action", *Environmental Sciences*, vol. 4, no. 3, p. 139-148.

Gustavsson, E., I. Elander and M. Lundmark (2009). "Multilevel governance, networking cities, and the geography of climate-change mitigation : two Swedish examples", *Environment and Planning C* : vol. 31, p. 911-925.

Guston, D. H. (2001). "Boundary Organizations in Environmental Policy and Science : An Introduction". *Science, Technology, & Human Values*, vol. 26, no. 4, p. 399-408.

Hayden, A. (2011) "Europe's Climate and Energy Policy : Lessons for Canada in Sharing the Effort of Emissions Reductions ?", Dalhousie EUCE Occasional Paper, no. 11. http://www.dal.ca/content/dam/dalhousie/pdf/Diff/euce/pubs/Occasional_paper_11.pdf, accessed December 2, 2014.

Holgate, C. (2007). "Factors and actors in climate change mitigation : A tale of two South African cities". *Local Environment*, vol. 12, no. 5, p. 471-484.

IPCC (Intergovernmental Panel on Climate Change) (2014) "Climate change 2014. Impacts, adaptation, and vulnerability. Summary for policymakers", http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf, accessed December 2, 2014.

Hoffmann, M. J. (2011). *Climate governance at the crossroads : Experimenting with a global response*. New York, Oxford University Press.

Jones, S. (2011). "A tale of two cities : Climate Change Policies in Vancouver and Melbourne – Barometers of Cooperative Federalism ?", International Journal of Urban and Regional Research, vol. 36, no. 6, p. 1242-1267.

Kern, K. (2010). "Climate governance in the EU multi-level system : The role of cities", Paper prepared for presentation at the Fifth Pan-European Conference of EU Politics, University Fernando Pessoa and Faculty of Economics of Porto University, Porto (Portugal), http://www.jhubc.it/ecpr-porto/virtualpaperroom/147.pdf, accessed June 9, 2014.

Kern, K. et H. Bulkeley (2009). "Cities, Europeanization and multi-level governance : governing climate change through transnational municipal networks". *Journal of Common Market Studies*, vol. 47, no. 2, p. 309-332.

Klein, R. J. T., E. L. F. Schipper and S. Dessai (2005). "Integrating mitigation and adaptation into climate and development policy : Three research questions", *Environmental Science and Policy*, vol. 8, p. 579-588.

Kousky, C. and S. H. Schneider (2003). “Global climate policy : Will cities lead the way ?”, Climate Policy, vol. 3, p. 359-372.

Krause, R. M. (2011). “Symbolic or substantive policy ? Measuring the extent of local commitment to climate protection”. *Environment and Planning C*, vol. 29, p. 46-62.

Juhola, S. (2013). “Adaptation to climate change in the private and the third sector : case study of governance of the Helsinki Metropolitan region”, *Environment and Planning C*, vol. 31, p. 911-925.

Legambiente (2012). “L’Italia delle alluvioni”, http://www.legambiente.it/sites/default/files/docs/litalia_delle_alluvioni_studio_ultimo.pdf, accessed June 9, 2014.

Lindseth, G (2004). “The cities for climate protection campaign (CCPC) and the framing of local climate policy”, *Local Environment*, vol. 9, no. 4, p. 325-336.

Mancebo, F. (2011) “La ville durable est-elle soluble dans le changement climatique ?”, *Environnement Urbain*, vol. 5, p. 1-9.

Massetti, E., S. Pinton and D. Zanoni (2007). “National through to local climate policy in Italy”, *Environmental Sciences*, vol. 4, no. 3, p. 149-158.

MoG (Municipality of Genoa) (2010a) “Sustainable Energy Action Plan. Summary”, http://helpdesk.eumayors.eu/docs/seap/492_1320854736.pdf, accessed June 9, 2014.

MoG (Municipality of Genoa) (2010b). “Sustainable Energy Action Plan”, http://helpdesk.eumayors.eu/docs/seap/492_1320854983.pdf, accessed June 9, 2014.

O.E.C.D. (2013). “Rapporti OCSE sulle performance ambientali : Italia 2013 Highlights”, http://www.oecd.org/fr/env/examens-pays/EPR%20Highlights%20ITALY%202013%20ITA.pdf, accessed June 9, 2014.

Ouranos (2010). “Savoir s’adapter aux changements climatiques”, http://www.ouranos.ca/fr/pdf/53_sscc_21_06_lr.pdf, accessed June 9, 2014.

Pitt, D. R. (2010). “Harnessing community energy : The keys to climate mitigation policy adoption in US municipalities”, *Local Environment*, vol. 15, no. 8, p. 717-729.

Pitt, D. R. and J. Randolph (2009). “Identifying obstacles to community climate protection planning”, *Environment and Planning C*, vol. 27. p. 841-857.

Ressources Naturelles Canada (2010). « Plan d’adaptation du Service de l’environnement de la Ville de Québec », https://www.rncan.gc.ca/sites/www.nrcan.gc.ca/files/earthsciences/pdf/mun/pdf/quebec_f.pdf, accessed June 9, 2014.

Robinson, P. J. and C. D. Gore (2005). “Barriers to Canadian municipal response to climate change”, *Canadian Journal of Urban Research*, vol. 14, no. 1, p. 102-120.

Scanu, E. (2014) “Multilevel climate governance in Europe : Are cities undermining Nation-States role in climate policy ?”, paper presented at the XVIII ISA World Congress of Sociology, Yokohama (Japan), July 16.

Scanu, E. (2015) “Climate governance in the post-industrial city : The urban side of ecological modernisation”. *Environmental Sociology*, vol. 1, no. 2, p. 102-115.

Schreurs, S. (Ed) (2005). *EU Environmental Policy Handbook. A Critical Analysis of EU Environmental Legislation*. European Environmental Bureau. http://www.eeb.org/?LinkServID=3E1E422E-AAB4-A68D-221A63343325A81B, accessed July 18 2013.

Schreurs, M.A. and Y. Tiberghien, (2007) “Multi-Level Reinforcement : Explaining European Union Leadership in Climate Change Mitigation”, *Global Environmental Politics*, vol. 7, no. 4, p. 19-46.

Selin, H. and S.D. VanDeever, (Eds) (2009) *Changing climates in North American politics. Institutions, policymaking and multilevel governance*. Cambdrige, MIT Press.

Sellers, J. M. (2005). “Re-placing the nation. An agenda for comparative urban politics”, *Urban Affairs Review*, vol. 40, no. 4, p. 419-445.

Sezgin, Z. (2013). “Ecological Modernization at the Intersection of environment and energy”, *International Journal of Energy Economics and Policy*, vol. 3, p. 93-101.

Schlosberg, D. (2013) “Theorising environmental justice : The expanding sphere of a discourse”, *Environmental Politics*, vol. 22, no. 1, p. 37-55.

Schroeder, H. and H. Bulkeley (2009). “Global cities and the governance of climate change : What is the role of law in cities ?”, *Fordham Urban Law Journal*, vol. 36, no. 2, p. 313-359.

Sippel, M. and T. Jenssen (2009). “What about local climate governance ? A review of promise and problems”, IER - Institute of Energy Economics and Rational Energy Use, University of Stuttgart, http://mpra.ub.uni-muenchen.de/20987/1/MPRA_paper_20987.pdf, accessed June 9, 2014.

Stoett, P. J. (2009) “Looking for leadership : Canada and climate change policy”, in : H. Selin and S.D. VanDeever (eds) *Changing climates in north american politcs. Institutions, policymaking and multilevel governance*, Cambdrige, Massachussets, MIT Press.

Tellmann, S. M. (2012). “The constrained influence of discourses : The case of Norwegian climate policy”, *Environmental Politics*, vol. 21, no. 5, p. 734-752.

The World Bank (2010) *Cities and climate change. An urgent agenda*, The World Bank. http://siteresources.worldbank.org/INTUWM/Resources/340232-1205330656272/CitiesandClimateChange.pdf, accessed December 2, 2014.

UN-Habitat (2011) *Cities and Climate Change. Global Report on Human Settlement 2011*, Washington, Earthscan.

Vasi, I. B. (2007). “Thinking globally, planning nationally and acting locally : Nested organizational fields and the adoption of environmental practices”, *Social Forces*, vol. 86, no. 1, p 113-136.

Vigour, C. 2005. *La comparaison dans les sciences sociales. Pratiques et méthodes*, Paris, La Découverte.

Ville de Québec (2004). “Plan de réduction des émissions de gaz à effet de serre”, http://www.ville.quebec.qc.ca/publications/docs_ville/gaz_serre.pdf, accessed June 9, 2014.

Vogler, J. (2013). “Changing conceptions of climate and energy security in Europe”, *Environmental Politics*, vol. 22, no. 4, p. 627-645.

Wang, R. (2012). “Leaders, followers, and laggards : Adoption of the US Conference of Mayors Climate Protection Agreement in California”, *Environment and Planning C*, vol. 30, p. 1116-1128.

Yalçin, M. and B. Lefèvre (2012). “Local climate action plans in France : Emergence, limitations and conditions for success”, *Environmental Policy and Governance*, vol. 22, p. 104-115.

Zahran, S., H. Grover, S. D. Brody and A. Vedlitz (2008a). “Risk, stress and capacity. Explaining metropolitan commitment to climate protection”, *Urban Affairs Review*, vol. 43, no. 4, p. 447-474.

Zahran, S., S. D. Brody, A. Vedlitz, H. Grover and C. Miller (2008b). “Vulnerability and capacity : Explaining local commitment to climate-change policy”, *Environment and Planning C*, vol. 26, p. 544-562.

Notes

1 The choice of comparing Quebec City and Genoa stems from the will to understand the ways two cities located in two different contexts are facing the same problem: how and with what differences and similarities a North American city and an European city act against climate change? This approach is akin to what Vigour calls "the comparison between different cases" (2005: 161). The cities considered in this study are different in many ways, but they are nevertheless comparable, notably because they are two mid-sized western cities with an economy mainly based on the service sector and port activities, and which have both decided to engage in the fight against climate change. In addition, the multilevel governance approach used here allows us to explain whether the observed differences in climate governance of these two cities are due to local (specific to urban contexts) or multilevel factors (broader political and institutional contexts in which they are located). This approach thus makes it possible to better contextualize and nuance our results.

2 The interviewees are representatives of: governmental institutions (environmental councillors of Genoa Municipality, Genoa Province, and Liguria Region); municipal company of environmental services (ASTER); municipal institutions (Urban Lab, Urban Center); professional associations (ANCE-Assedil, CONFESERCENTI); epistemic groups (CRUIE, ARE Liguria); environmental associations (Legambiente, Italia Nostra, Movimento per la decrescita felice); two qualified witnesses.

Pour citer cet article

Référence électronique

Emiliano Scanu et Geneviève Cloutier, « Why do cities get involved in climate governance? Insights from Canada and Italy », *Environnement Urbain / Urban Environment* [En ligne], Volume 9 | 2015, mis en ligne le 15 octobre 2015, consulté le 09 avril 2016. URL : http://eue.revues.org/635

À propos des auteurs

Emiliano Scanu
Sociology Department, Laval University, Quebec City, Canada (emiliano.scanu.1@ulaval.ca)
Geneviève Cloutier
Graduate School of Planning and Regional Development, Laval University, Quebec City, Canada

Résumés

Cities the world over are tackling climate change, even when their national governments are largely inactive in this area. Which factors trigger their implication? Through which kinds of policies do cities become engaged in this issue? Based on previous studies and on urban and multilevel governance theoretical frameworks, this article suggests some answers. An original analytical grid is developed and used to compare two cases in Canada and Italy. The results confirm that the way in which municipalities respond to climate change largely depends on their local and multilevel contexts, as well as on the potential benefits of climate action.

L'implication municipale dans la gouvernance climatique : que nous apprennent les cas de Québec et de Gênes ?

Nombreuses sont les villes qui agissent face aux changements climatiques, cela même si leurs gouvernements nationaux sont plutôt inactifs à cet égard. Quels sont les facteurs qui déterminent cette implication ? Quelles sortes de politiques découlent de cette implication ? Afin de fournir quelques pistes de réponse à ces questions, l'article s'appuie sur la littérature relative à la gouvernance urbaine et multiniveau et sur une grille analytique servant à comparer deux cas, au Canada et en Italie. Les résultats confirment que la façon dont les villes répondent aux changements climatiques dépend autant de leurs contextes locaux et multiniveaux, que des bénéfices potentiels de l'action climatique.

Entrées d'index

Mots-clés : gouvernance climatique multiniveau, grille analytique de la gouvernance climatique urbaine, facteurs d'implication, ville de Québec, Gênes
Keywords : multilevel climate governance, urban climate governance analytical grid, implication factors, Quebec City, Genoa