

Positioning Vancouver through urban sustainability strategies? The Greenest City 2020 Action Plan

Julia Affolderbach, University of Hull, j.affolderbach@hull.ac.uk

Christian Schulz, University of Luxembourg, christian.schulz@uni.lu

Abstract

Cities around the world have launched greening initiatives to reduce their carbon footprint and to become more sustainable. At the same time, they have also sought to use these initiatives to position themselves as climate change leaders and green champions. This paper focuses on the City of Vancouver's Greenest City 2020 Action Plan as urban policy strategy to reduce carbon emissions. Based on interviews with actors and experts involved in the development and implementation of the plan, the paper evaluates the role green leadership aspirations play in shaping urban climate change policy and how policy makers and stakeholders use policy to position the city and its greening initiatives locally and globally. In particular, it analyzes the role of competitive positioning and green leadership in sustainability initiatives and change within and beyond urban boundaries. While leadership suggests increased buy-in of residents and those involved in the implementation of the strategy and multiplication effects through learning within the region and between (peer) cities, it can also pose challenges as the interest in meeting leadership claims can impede more radical change through specific targets and implementation strategies and challenge other sustainability objectives.

Keywords: sustainable cities, climate change leader, urban policy, city boosterism, place branding

Please note:

This is the pre-publication version of a manuscript accepted for publication in June 2017 in the Journal of Cleaner Production to be published in the journal in October 2017.

The full citation of the article is:

Affolderbach, J. & Schulz, C. (2017) Positioning Vancouver through urban sustainability strategies? The Greenest City 2020 Action Plan. *Journal of Cleaner Production* 164, 676-685. (<https://doi.org/10.1016/j.jclepro.2017.06.234>)

1 Introduction

Green cities, smart cities, blue-green cities and livable cities are just a few of the catch phrases that illustrate the roles cities are ascribed and claiming in climate change debates. Cities are frequently considered the optimum strategic scale for action to mitigate climate change due to comparatively high levels of greenhouse gas emissions in urban areas and the relatively high influence of municipal governments over local land use, carbon control policies and transitions towards a green economy. Indeed, there is growing evidence that cities have introduced considerably stricter goals and targets through highly ambitious green action plans and strategies than set by national or corporate bodies (e.g. Freiburg's energy standards; Fastenrath & Braun, 2016). One example of ambitious climate change action at the urban scale is the City of Vancouver. In 2011 the City of Vancouver announced their intention to become the world's greenest city by 2020 through the introduction of the Greenest City Action Plan (GCAP). This paper uses the example of the GCAP to evaluate the role of green leadership in urban sustainability policy initiatives.

Urban sustainability and the idea that cities (or municipal governments) should be promoted as agents of, and drivers behind, sustainable development is not new (Campbell, 1996; Beatley and Manning, 1997; Beatley, 2000). But calls from within policy and academic circles that demand a deeper rethinking and transformation of systems and practices are much more recent (Bulkeley et al. 2011; DECC 2009; WGBU, 2011; Smedby & Neij 2013). More radical and innovative conceptualizations of future scenarios through sustainability transitions, it is argued, offer significant opportunities and capacities to induce more radical change (Markard et al. 2012). For example, a summary report by the German Advisory Council on Global Change (WGBU, 2016) in preparation of the Habitat 2016 conference emphasized the 'transformative power' of cities towards sustainability goals.

Within this broader literature, scholars have focused on identifying drivers of and barriers to urban low-carbon transitions (Bulkeley et al., 2011; Rutherford and Coutard, 2014; Francesch-Huidobro, 2015; Olazabal & Pascual, 2015). Lombardi et al. (2001), for example, argue that early commitment to strong sustainability in the conception of policies and development plans is a necessary prerequisite for cities to achieve sustainability outcomes that are socially, environmentally and economically viable. The setting of strong sustainability or greening objectives is key to climate change leadership but as many authors have argued, most proposals shy away from more radical ideologies (Bina 2013; Krueger & Gibbs, 2007). While there are examples of relatively radical transformations in urban sustainability regimes (classic examples include Freiburg in Germany and Växjö in Sweden), critics have pointed to what While et al. (2004) described as 'urban sustainability fixes' in public policy and development strategies that consist of watered down sustainability proposals that may be used to conceal specific interests under broader banners of environmental and social sustainability objectives.

Further, 'greening' (whether more broadly framed as sustainability effort or more narrowly focused on climate change mitigation) is increasingly being used

as urban strategy to brand the city and to promote and generate economic growth (While et al. 2010; Acuto, 2012; Anderberg & Clark, 2013; McCann, 2013; Andersson, 2016). Urban greening and climate change leadership, hence, are driven by different motivations and interpretations of sustainability that may result in a disconnect between objectives on the one hand and sustainability practices and outcomes particularly as they are often driven by urban entrepreneurialism and inter-urban competition (Harvey, 1989; Flint and Raco, 2012). From a geographic perspective, urban sustainability strategies track in two directions. They are both introspective, i.e. they talk to and focus on the city itself (e.g., citizen wellbeing, municipal elections, justification of local development) and outward-looking or extrospective paying close attention to other cities and scales (e.g., global rankings, place branding) (McCann, 2013).

Studying the case of Vancouver's GCAP, this article critically examines the conceptualization of the City's greening strategy including rhetorics and policy discourses including its goals and objectives (e.g., framing and conceptualization) and its implementation and outcomes of the policy strategy drawing on interviews with experts and representatives involved in the conception and implementation of the GCAP.ⁱ More specifically, the paper examines the following questions:

- How is the GCAP used by policy makers and other actors to position the city within local and global sustainability discourses?
- How do these green leadership ambitions influence the GCAP's implementation process as well as less tangible outcomes through knowledge exchanges, circulation of ideas, and green visioning?
- What are the spatial dimensions of green leadership discourses, that is the spatial articulation of global rhetoric and framings on the one hand (extrospective dimensions), and political action and agency at the local/regional level (introspective dimensions) on the other?

The remainder of this paper is structured as follows. The next section presents a brief discussion of the literature on urban sustainability and how it relates to work on place branding and leadership to provide a framework for the following empirical case study. The following three sections provide the context of the case study and analyze the GCAP in respect to greening and leadership as well as geographic dimensions.

2 Governing urban greening, competitive leadership and city branding

Over the past few decades, the ideal of the sustainable or green city has become a core objective of urban governance, policy making and development strategies (Bulkeley et al., 2011; Joss, 2012). Cities are seen as "both harbingers of future conditions and test beds in which to establish more sustainable ways of living" and have become "subject to ever more vigorous ecological conceptualization" (Evans 2011: 223). Cities around the world are setting ambitious environmental goals, implementing socio-technical innovations, cooperating and competing as global climate change leaders (Bulkeley et al., 2011).

But urban sustainability is not solely driven by environmental objectives. With

increased inter-spatial and inter-urban competition, 'greening' has become not only an environmental but also an economic and political necessity. Urban environmental or sustainability agendas are seen as serving several goals simultaneously: (1) they respond to and comply with growing adaptation pressures whether these are in response to environmental needs, political and legal sustainability imperatives (e.g. at higher spatial scales), or public pressures and (2) they help strengthen the competitiveness of the city (quality of life, image).

The realization of possible multiplication effects is not straight forward as discussions around motivations and drivers of greening have shown (Lombardi et al., 2011; Eden, 2000). Understanding and interpretations of sustainability vary widely (Hopwood et al., 2005) and Waas et al. (2011: 1638) highlight ambiguities in the use of the concept of sustainability and the deliberate misuse of the term as "green or sustainable smoke screen" and marketing labels. For example, While et al. (2004), Lombardi et al. (2011) and Long (2016), amongst others, illustrate how urban greening strategies have been hollowed out and twisted to cover a range of bases. In reference to David Harvey's (1982) *spatial fix*, While et al. (2004) critically described this approach as *urban sustainability fix* to describe the "(s)elective incorporation of environmental goals, determined by the balance of pressure for and against environmental policy within and across the city" (While et al., 2004: 552). Also described as 'roll-out environmentalism' in reference to increased investment by urban elites and entrepreneurial approaches to environmental management since the 2000s (Béal, 2011), the concept is selective in terms of its thematic foci and the target groups addressed (e.g., high environmental quality through green spaces and noise reduction in wealthy neighborhoods). It reflects an incomplete understanding or bias of the concept of sustainability as it partly reconciles economic and environmental objectives while neglecting the social dimension (including social and environmental justice) (Newell and Mulvaney, 2013; McKendry, 2016).

With their studies of Austin's smart growth strategy, Long (2016) and Tretter (2013) illustrated how the 'greening up' of the city's downtown has turned out to be a rather elitist, socially exclusive and investor friendly endeavor, using the sustainability label as a vector for unbalanced policies (see also Montgomery's, 2015 work on Detroit). Other work has highlighted uneven power relationships and the role of actors, networks and eventualities through which information and experiences travel. Béal (2011, 406), for example, described how 'urban oligarchies' increasingly dominate decision-making processes as an example of specific stakeholders setting urban environmental agendas. However, Temenos and McCann also emphasized how sustainable fixes require broader support by the 'local population as a whole' in order for them to be realized (Temenos and McCann, 2012: 1400).

One strand of the literature has focused on identifying success and limitations of sustainability strategies both with the aim to explain unique developments but also more normatively to identify best practices and replicable and transferable success models (e.g., Yin et al., 2016). These are particularly relevant for cities seeking to import models that not only respond to environmental challenges but

also boost the city's competitiveness on a regional or global scale. Questions of the transferability and comparability of urban sustainability initiatives and approaches are not straight forward as they are spatially complex: what works in one place may not be right in another.

Work by Joss (2010) and Holden et al. (2015), for example, focused on identifying and categorizing urban sustainability developments that are frequently considered to be "aspirational and world-class model sustainable community developments" (Holden et al. 2015: 11419). Similarly, Van Doren et al. (2016) identified different ways through which low-carbon urban initiatives can be scaled up in order to increase impact. Empirical evidence of traded and transferred policies and planning processes, often interpreted as best practices, reveals a persistent neglect of environmental and social aspects in favour of economic interests (Krueger & Gibbs, 2007; McCann & Ward, 2010; Cook & Swyngedouw, 2012; Temenos & McCann, 2012).

In summary, research has shown increased evidence of the use of greening and sustainability campaigns to boost a city's economic competitiveness and to create the image of a livable and desirable place (e.g. Acuto, 2013; Anderberg & Clark, 2013). 'Green' labels and language are used deliberately in branding and marketing strategies (Béal, 2011; Konijnendijk, 2010). Over the last two decades, city and place branding has become a core element of competitiveness-oriented strategies which cities and city regions apply to position themselves at an international or global scale (see overviews in Kavaratzis, 2007; Lucarelli and Berg, 2011; Sadler et al, 2016). While 'city marketing' is to be understood as the totality of strategies and tools to promote a city, 'city branding' is one of the (increasingly applied) parts of such strategies, aiming at creating or further disseminating a distinct image of a city. Also known as 'place branding', this concept evolved from product or business marketing strategies and attempts 'to create associations with the city; associations that are emotional, mental, psychological, moving away from the functional-rational character of marketing interventions' (Kavaratzis, 2007: 704).

Branding policy may target heterogeneous audiences ranging from potential investors to skilled workforce, students and other new residents, to tourists and visitors, trying to attract their interest in investing in or coming to the promoted place. Additionally, it is increasingly recognized that city branding also has an internal audience, including residents, local businesses and other stakeholders (Zenker and Beckmann, 2013). As McCann (2013: 22) put it: "an important but understudied audience for policy boosterism is local". In the branding activities of a city, 'policy boosterism' can be understood as a subset of activities that "(...) involves the active promotion of locally developed and/or locally successful policies, programs, or practices across wider geographical fields that can then be used to promote local strategies within policy making communities to boost the reputation of the city as well as stakeholders involved in the policy process" (McCann, 2013: 9).

More generally speaking, city branding seeks to establish a recognizable 'place identity', which may have different though interrelated dimensions. According to Weichhart (1990), spatial identities can be either understood as the *identity of a*

given place, i.e. the cognitive and emotional representations which individuals (or groups of individuals) attribute to that place based on their perception (e.g. 'Vancouverism' used in reference to Vancouver's particular urban design policy that has recently become blended with the city's approach to green urbanism), or as the *identification with* a given place, i.e. when particularities of a place are appropriated by individuals and thus become constituents of personal or collective identities (e.g. 'being a Vancouverite').

Traditionally, place branding focuses on the first notion, trying to draw people's attention to a particular characteristic (e.g. 'destination branding' in tourism marketing) and to create 'new semiotic spaces' (Lucarelli and Berg, 2011: 22). The second notion might be considered a welcome side effect – as it is easier to sell a tourist destination if many residents share and promote the same perception through 'civic consciousness' (Kavaratsis and Ashworth, 2005: 512). In the case of green policy boosterism, however, *identification with* might play a more fundamental role in branding and marketing as they are "ideological, political projects that seek to create a general sense of local common purpose in order to naturalize the notion that certain types of development and growth are good for everyone, in one way or another, and to marginalize any group or individual that questions this myth" (McCann, 2013: 8). Cidell (2015: 567), similarly stresses 'a new round of performance' by a wide range of actors such as city staff and elected officials, residents, businesspeople, and others that build, contest, and change the image, identity, and reputation of the green city.

The political claim for green leadership frequently complements extrospective objectives ('competitiveness, attraction') with introspective goals that can "operate as an umbrella that can cover a multitude of stakeholders and audiences" (ibid.). Braun et al. (2013, 23) underline the particular role residents can play in city branding endeavors:

"(...) new and existing residents who can easily identify with the communicated place brand will likely become ambassadors of the place brand. In their role as integrated part of the place brand, residents negotiate (intentionally or not) the meaning of this brand: they form the place brand to a great extent and this negotiated meaning is what might be broadcasted to the outside world."

If the city brand and place identity are shared and appropriated by the majority of the population, or by relevant actor groups, it can be used as both a catalyst and legitimation for particular and determined policies under the sustainable development banner. At the same time, city branding through green leadership, i.e. "wanting to be *known* for environmental protection" (Cidell, 2015: 570, emphasis in original), can be one of the drivers behind urban greening policies and initiatives as illustrated by Cidell's (2015) study on the adoption of green building policies in US cities.

The potential power of branding and place identity stresses the importance of Kavaratzis' (2007: 705) plea to "critically re-examine issues such as the 'right of entry' into city marketing partnerships and who actually gets it, the implicit

goals of certain city marketing programmes and whose interests they actually serve, the distribution of any financial or other profits achieved by such programmes and who actually benefits.”

Another particularity of green city boosterism compared to traditional city branding is that – at least in cases such as Vancouver, Portland, Freiburg or Copenhagen – the ‘green’ has not only been identified as a potential brand to be explored in order to give the city a distinct and recognizable profile. Its deliberately competitive orientation aspiring for global leadership with its ‘extrospective, boosterist agenda’ (McCann, 2013: 10) seeks to create a certain image or identity, that at the same time exposes the city to external evaluations and bench marking exercises (e.g. through various green city awards and rankings) which bear a certain risk to ‘lose’ the self-defined status when competitors catch-up or evaluation schemes change from ranking to ranking.

The search for ‘leadership branding’ as displayed in Vancouver’s ‘greenest city’ slogan used with a ‘competitive suffix’ (McCann 2013: 10) thus contains a certain probability that evaluation pressure might be perceived as an exogenous imperative justifying certain policies. Here, again, the inbound effect might prevail over the impact of the usually outward oriented branding approaches. The ‘sustainability talk’ shared by most of the relevant stakeholders and larger parts of the population can thus become an even more performative discourse through this straightforward branding and boosterism.

3 Green City Vancouver

In 2011 the City of Vancouver (hereafter Vancouver) introduced a new policy strategy, its Greenest City Action Plan (GCAP). The overall objective of the strategy is to stay “on the leading edge of urban sustainability” (City of Vancouver 2011) by reducing the cities CO₂ emissions by 2020 by 33% below the 2007 level and by making the city’s energy supplies 100% renewable by 2050. The plan has been framed and promoted as green leadership that will turn Vancouver into the greenest city in the world as reflected in the name of the plan. The GCAP has indeed received global attention and recognition through awards such as the ‘Best Green Building Policy’ by the World Green Building Council in 2013 and the C40 Cities Awards for Carbon Measurement & Planning in 2015.

The City of Vancouver, located on Canada’s West coast, is the largest municipality by population (603,502 residents as of 2011) within the regional district of Metro Vancouver (2.5 million). The latter is constituted by a voluntary collaboration of 21 municipalities, one treaty First Nation and one electoral area (Fig 1). Vancouver is frequently listed amongst the top ten in global livability rankings (e.g., EIU, 2014) and attributed the status of a green city by practitioners, scholars and international media. Part of this status, many argue, is due to the natural setting of the city between the Georgia Strait and the Coastal Mountains, which invokes a strong sense of environmental consciousness and a sensible obligation amongst its population to protect the natural environment.

Berelowitz (2005: 162) described Vancouver as “a vast display case for the aesthetic consumption of nature” emphasizing the influence of the natural

environment on the urban structure. Environmental activism and leadership in Vancouver are frequently traced back to the 1970s and the foundation of Greenpeace and the work by David Suzuki and his eponymous foundation. British Columbia as a region and the urban agglomeration of Vancouver are dominated by a ‘deep-green’ alternative political climate illustrated by numerous sustainability and greening initiatives that stands in contrast to the predominately ‘brown’ politics of the geographically distant political center in Ottawa that promotes a resource- and energy-intensive growth agenda (Scerri & Holden, 2014, p. 269). The same conditions apply, however, to the other municipalities within Metro Vancouver, which show considerable variations in their commitment to green innovations and sustainable development.

Vancouver’s governance system is characterized by a relatively strong record of public participation and engagement (Rosol, 2015) and an early political interest in climate change mitigation.ⁱⁱ For example, the 1990 Clouds of Change Final Report of the City of Vancouver Task Force on Atmospheric Change was one of the first municipal blueprints to respond to global warming. In 2006, former mayor Sam Sullivan launched the ‘EcoDensity’ initiative as an attempt to achieve sustainability, affordability and livability by means of “high quality densification” (City of Vancouver, 2006, p. 4) especially in low- and middle-density parts of Vancouver which was contested within the City (Rosol, 2013). The natural setting together with the history of local environmentalism, and its governance regime provide the context of an analysis of the GCAP.



Fig. 1: Map of Metro Vancouver (data source: GADM; design: Cyrille Médard de Chardon)

The remainder of this paper analyzes the GCAP drawing on primary and secondary sources. The research design consisted of a three-pronged approach involving document analysis, World Café inspired focus groups and personal interviews. Fieldwork was conducted in Vancouver between November 2013 and June 2015 including a local workshop organized in November 2013 involving 14 local experts followed by 34 semi-structured interviews with local government officials/city staff (past and present), planners, consultants, urban designers, engineers, NGO representatives, developers, researchers and other local stakeholders. The interview material is complemented by content analyses of government reports, position papers, newspaper articles, websites, and other official and semi-official sources related to the conception and implementation of the GCAP.

The GCAP is a politically motivated strategy and was developed as political platform under incumbent Mayor Gregor Robertson's centre-left Vision Vancouver party in 2009. The party had a very clear and ambitious goal: to make Vancouver the greenest city in the world (Holden and Larsen, 2015; Scerri and Holden, 2014). To achieve this, the GCAP was developed using a pluralistic and participatory planning approach including a blue ribbon task force, the Greenest City Action Team (GCAT), consisting of academics, civic and environmental leaders, industry representatives with opportunities for public engagement. The GCAT was tasked to develop a strategy to turn Vancouver into a world leading green city. The GCAT commenced its work in February 2009 only three months after the Mayor's election and delivered its recommendations later that year through the 'Vancouver 2020 a bright green future' report (City of Vancouver, 2009a).

The GCAT identified ten goals based mainly on a screening and evaluation of measurements, indicators and best practices used in leading green cities around the world. The goals refer to three overarching areas (see Fig. 2): (1) zero carbon (climate leadership, green transportation, green building), (2) zero waste (zero waste) and (3) healthy ecosystems (access to nature, clean water, local food, clean air). The ten goals are further broken down into more specific targets, setting at least one measurable objective per goal (Fig. 2). For example, the green building goal requires (1) 'all buildings constructed from 2020 onward to be carbon neutral in operations' and (2) a reduction of 'energy use and greenhouse gas emissions in existing buildings by 20% over 2007 levels' (City of Vancouver, 2011: 23). Rather than following federal or provincial standards and policies, the process illustrates the City's focus on international standards and leadership as also explicitly stated in the identified targets for clean air and water. While nine goals are directly measured, the tenth – lighter footprint – uses a proxy to quantify progress towards the set target of reducing the city's ecological footprint by empowering citizens. Empowerment is achieved through resident participation in workshops and programs such as CityStudio (Box 1). Residents are seen as key in reaching set targets by reducing waste, growing local food assets and in respect to green transportation.

Goals	Targets	Overarching areas		
		Zero Carbon	Zero Waste	Healthy Eco-systems
1 Climate and Renewables	Reduce community-based greenhouse gas emission by 33% from 2007 levels.	●	●	
2 Green Building	1 Require all buildings constructed from 2020 onward to be carbon neutral in operations. 2 Reduce energy use and greenhouse gas emissions in existing buildings by 20% over 2007 levels.	●		
3 Green Transportation	1 Make the majority (over 50%) of trips by foot, bicycle, and public transit. 2 Reduce average distance driven per resident by 20% from 2007 levels.	●		
4 Zero Waste	Reduce solid waste going to the landfill or incinerator by 50% from 2008 levels.		●	
5 Access to Nature	1 All Vancouver residents live within a five-minute walk of a park, greenway, or other green space by 2020. 2 Plant 150,000 new trees by 2020. Added later: 3 Restore or enhance 25 hectares or natural areas between 2010 and 2020. 4 Increase canopy cover to 22% by 2050.			●
6 Clean Water	1 Meet or beat the strongest of British Columbian, Canadian, and appropriate international drinking water quality standards and guidelines. 2 Reduce per capita water consumption by 33% from 2006 levels.			●
7 Local Food	Increase city-wide and neighbourhood food assets by a minimum of 50% over 2010 levels.			●
8 Clean Air	Always meet or beat the most stringent air quality guidelines from Metro Vancouver, British Columbia, Canada, and the World Health Organization.			●
9 Green Economy	1 Double the number of green jobs over 2010 levels by 2020. 2 Double the number of companies that are actively engaged in greening their operations over 2011 levels by 2020.	●	●	●
10 Lighter Footprint	Reduce Vancouver's ecological footprint by 33% over 2006 levels. ¹	●	●	●

Fig. 2: Greenest City Action Plan Framework (Source: City of Vancouver, 2011)

CityStudio (<http://citystudiovancouver.com/>) is a city-led innovation hub that brings together city staff, university students and community members to create, design and implement projects in support of the goals set by the GCAP. CityStudio emerged out of an idea contest as part of the GCAP public participation process and has been promoted and shared by the city as transferable model. Due to increased numbers of inquiries from other cities that were contacting CityStudio staff to find out more about the model lead to a first workshop to share ideas with other cities. Financially supported by the J.W. McConnell Family Foundation, CityStudio staff together with other city staff and practitioners presented their approach in a workshop held in May 2015 entitled 'The art of cities' that targeted at teams of four from other Canadian cities consisting of senior academic staff, senior city staff, faculty member and student interested in the approach of 'collaborative city building'. As such, CityStudio

Box 1: CityStudio (Source: Communication with CityStudio staff, June 4, 2015)

The planning process was accompanied by public engagement. The earlier phases involved open forums while a wider public engagement process was launched following the presentation of the first draft of the Greenest City Action Plan in 2010. According to estimations of the City, a total of 35,000 people from around the world actively participated through various formats including face-to-face workshops, idea slams, web-based tools involving also 60 city staff, 120 organizations and thousands of individuals (Robertson, 2016). The GCAP was approved by City Council in 2011 and released in 2012 (City of Vancouver, 2012a). Ten thematic but interdisciplinary working groups consisting of city staff and supported by external advisory committees were then charged with determining how to best achieve the targets outlined in the 2009 'Vancouver 2020 A Bright Green Future' (VBGF) report and to manage the implementation. The implementation of the GCAP included a new organizational strategy where the sustainability goals were incorporated into the existing system spanning different departments.

Asked about the novelty of the GCAP, respondents focused less on the identified goals and components of the strategy that drew mainly on existing tools from esteemed green cities around the world, but rather highlighted the identification of quantifiable targets and the ambitious time horizon for implementation, monitoring and recording. For all but one goal (see Fig. 2), hard, quantifiable measures were chosen for their suitability to be followed-up on. Progress towards GCAP goals are evaluated and communicated through yearly implementation updates published by the Greenest City Action Team providing progress relying on these metrics. As one former City staff argued, "In order to be the greenest city in the world, we can't just adopt these best practices. We actually need to hit these targets [...] so it was really the price of metrics, quantification of sustainability outcomes and this kind of target-based approach." (Interview Nov. 10, 2014). Also, the quantifiable metrics helped to clearly communicate the City's progress to the public and made the City

accountable (former City staff, Interview June 18, 2015). In some cases, this required changing the methodology to calculate identified targets over time as availability of data was changing.

4 Positioning the Greenest City Action Plan

The core objective of the GCAP as blatantly advertised through the name of the policy itself highlights the ambitious goal of the city. The presentation of the objective to become the greenest city illustrates strong interest in positioning the city internationally addressing both local and global audiences. Respondents involved in the early phases of the GCAP emphasized the “innovation in public engagement [that] came through the development of the Greener City Plan” (former City staff, Interview June 18, 2015). Indeed, the participatory nature of the process seems to have earned wide public support but residents were also exposed to a relatively successful branding strategy.

The framing of the policy initiative around municipal empowerment and climate change action through identified goals of ‘economic development’, ‘green jobs’ and investment into infrastructure places emphasis on quality of life that resonate with the broader public as suggested by a number of respondents. Greenness is thus translated into liveability for the current and potential future residents of Vancouver. This positive narrative has been described both as inspirational and celebratory (Westerhoff, 2015). The tracking of progress and the involvement of citizens in reaching identified targets help create and enforce local identity and a sense of ownership amongst the local constituency. One of the targets – to achieve a lighter footprint – is based on public engagement using the proxy of the number of people empowered by a City-led or City-supported project to take personal action. While the population was reported to support the Greenest City Action Plan, there are ‘definitely tensions’ around ‘specific pieces of implementation’ particularly as they relate to aspects of affordability (City Staff, Interview Nov. 7, 2014).

The example of the green building goal helps illustrate this point. The GCAP relies mostly on bylaws to reach its green building targets. Policy measures are implemented through the Vancouver building bylaws (effective July 1, 2014) that have been and are foreseen to be updated in regular intervals to include stricter energy-efficiency requirements for new one- and two-family homes and energy audits and upgrades for existing buildings under renovation as well as the Green Energy Code. The City describes its building code to be the greenest in North America (City of Vancouver, 2011), an opinion shared by many including the Canada Green Building Council (Wooliams, 2014). However, respondents explicitly considered Vancouver within the North American context rather than stricter European (passive house) standards.

A set of three targeted rezoning policies allows for increased building development through higher density and increased building height by requiring significantly higher sustainability standards. The green building rezoning policy requires LEED Gold certification for new buildings benefiting from rezoning (targeting a 20-50 % increase in efficiency over the local energy code).ⁱⁱⁱ Public concern has increased in respect to the bylaws offering exceptions to developers

to increase the floor area of developments at the expense of stricter environmental standards. Critics see this as municipal sustainability strategy that is catering towards the 'rich' as developers will be able to increase their profits through increased floor area for sale, pass on added costs of upper segment housing to affluent buyers/investors and further inflate Vancouver housing prices at the expense of affordable housing.

The leadership frame of the GCAP does not only rely on the support by local residents but also helps inspire and motivate city staff. Respondents involved in the implementation of the strategy expressed their motivation to be 'first' showing similarities to Cidell's (2015) findings. At the same time, the direct comparison was also seen critically. "It is a fool's game who is the greenest city [...] there should be no standardized way to compare one city to the next." (former city staff, June 6, 2015). The GCAP's ambitious goals thus do not resonate equally with all interviewed and involved in the initiative. Interestingly, those more critical towards the GCAP felt the actions were falling short of initial visions (see section 5 below).

The GCAP is not only directed at Vancouver residents. The City (and the general supportive public) employs an outward strategy during all phases from conception to progress assessment. Most obviously and reflected in the planning process and development of the GCAP, Vancouver seeks world leadership by measuring its performance globally in comparison to esteemed green cities involving competitive and collaborative elements. This is illustrated by the first report of the GCAT (City of Vancouver, 2009b) that uses examples of world leadership for each of the identified categories including, for example, the example of the City of Berkeley on green building retrofits. A former City of Vancouver employee (Interview May 16, 2014) described the strategy as follows: "We [City of Vancouver] will never beat Oslo with its 80% district energy. But if we do well, get second place in every category across all ten disciplines then we would be the first green city with the other scoring metrics. So our principle was to do very well in all the categories." The conception phase of the policy involved global scoping and identification of 'vanguard cities' that could provide best practices, experience and expertise that could be brought in and applied to Vancouver (e.g., Copenhagen on district energy).

Achievements are similarly measured and presented in comparison to policy initiatives at the regional scale. The GCAP implementation updates include relative positioning against the 'deep green' province of British Columbia (B.C.) stating that the update of the Vancouver Building Bylaw will require family homes to be "50 per cent more energy efficient than the 2012 B.C. Building Code" (City of Vancouver, 2013: 15). The relationship between municipalities within Metro Vancouver is commonly described as collaborative where a number of services are jointly provided and can only be realized collaboratively (e.g. public transportation). In this sense, Vancouver's endeavour to act as green city leader suggests inconsistencies between different scales and actors where leadership is claimed at the city scale but metrics and implementation may rely on the larger region. A representative of the City of North Vancouver (Interview May 21, 2014), which is itself relatively progressive in the field of green urbanism, described the relationship as follows: "When we have collaborated with them

[City of Vancouver], they have said: ‘Let us be the first past the post, and we will share everything with you, but can you continue six months after we have started?’ “. While the strategic positioning of Vancouver within the larger agglomeration primarily focuses on city marketing and branding, it also offers legitimation and models to follow for neighbouring communities further described below.

5 Leading sustainability transitions?

Vancouver gained a reputation as green city and attracted considerable attention from elsewhere before the introduction of the GCAP. The more recent claim for leadership requires pioneering sustainability innovations such as green building policies and practices that may provide insights for wider application. “The reason why we do it (GCAP) is because we hope [...] to do it in a replicable manner. It doesn’t mean anything for the world if we just get the best transportation plan or the best district energy plan in the world” (Former City Staff, Interview Nov. 10, 2014).

While the ambitious goal of world leadership seems to have been quite inspirational and motivational to city staff and those involved in the implementation of the plan, respondents reported a changed perspective on green leadership. “We want to say we’re first at this and first at that, kind of thing, but actually it’s really changed to be now saying, no, actually what you want is transformation to happen as quickly as possible. [...] So it really is in our best interest to let other people be first that can help, share information.” (Former City Staff, Interview May 16, 2014). The importance of collaboration and exchange with different cities particularly for knowledge and information sharing was brought up by a number of respondents and is consistent with Cidell’s (2015) findings on factors supporting the adoption of urban green building policies.

The relationship between Vancouver and other peer cities was described as ‘friendly competition’ through close collaboration. “We recognize that competition gives us the momentum to push further to the next level and ultimately we all want to share our experiences collectively” (City Staff, Interview Nov. 7, 2014). Respondents mentioned regular collaboration with San Francisco, Portland, Seattle, Chicago, Toronto, Los Angeles, Boston and New York through institutionalized relationships such as the Urban Sustainability Directors’ Network and through direct peer exchange of staff and experts on specific issues and experiences. Robertson (2016) also emphasized Vancouver’s involvement in the C40^{iv} District Energy Network and its role in setting up the ICLEI’s^v 100% Renewable Cities Network. Despite the global scoping and framing of the GCAP, collaboration and peer exchange is largely restricted to the North American and Canadian scale and a number of respondents felt that they were more often inviting expertise from elsewhere to Vancouver than being the one invited.

Vancouver can be regarded as part of a loose network of other, similarly ambitious or innovative peer cities in North America. At the regional scale, however, Vancouver’s self-attributed leadership role seems to have more direct

effects on other municipalities. Many of them either try to simply replicate Vancouver's achievements (follow-the-leader-mimicry), or they rely on instrumental partnerships with this strong peer when it comes to own initiatives. Regarding the latter, the ability to provide success stories from Vancouver to convince local councils to adopt new strategies was seen as crucial in terms of implementation. A respondent from the City of North Vancouver (Interview May 21, 2014) argued: "If anything, it probably benefits our politicians and our public to know that we are not the first off the block". Some have benefited directly from Vancouver's ambition for world leadership, for example, a study commissioned by the City of Vancouver (which paid CA\$100,000) on ASHRAE^{vi} 90.1.2010, an energy standard for buildings, was used both by the City of North Vancouver and the Province to justify the introduction of ASHRAE into city and provincial code before it was adopted in Vancouver.

But collaboration with municipalities in British Columbia, particular in Metro Vancouver vary. While the University of British Columbia (UBC) and Vancouver were seen as becoming more closely aligned (Munro et al., 2016), and Surrey and the City of North Vancouver were mentioned as active in particular sustainability fields, other municipalities were described as much less inclined to take on board similarly ambitious sustainability objectives. However, a lot of sustainability actions require regional coordination including transportation, waste, water and sewer planning and common ground – in the absence of a regional planning authority – is not always easy to find. "Some places still want bigger roads [...] so it's not always 100 % alignment in this" (City Staff, Interview Nov. 7, 2014).

The City's competitive positioning has thus created some multiplication effects as Vancouver's striving for world leadership is helping to break ground in sustainability transitions through precedent cases that show that innovative approaches, policies and regulations can work (e.g., in order to convince local councils) and that help break ground to allow the mainstreaming of concepts. The relevance of these effects at least on US cities is also evident in Cidell's (2015) study. As such, green leadership and city boosterism can offer value through the sharing of sustainability strategies within regions and between (peer) cities that again may create their own sphere of influence.

The GCAP is an ambitious low-carbon strategy but approaches are not necessarily easy to transfer. Policy transfer and mobility were seen to depend on specific local contexts including availability of funds. Vancouver's Deputy City Manager believed that much could be learned from Vancouver's experience, not as a replicable 'wholesale approach' but "much of what is happening in Vancouver is replicable and other cities can learn from how to create a plan that is comprehensive" (Interview Nov. 7, 2014). The public engagement component in particular was seen as particular strength of the plan which the City was eager to share through peer-to-peer networks as illustrated by the example of CityStudio (Box 1).

Perspectives on the success, impact and significance of the GCAP vary considerably. Quantified and target-based approaches of environmental performance measures are both easy to communicate and effective in promoting

the city's green achievements. But there are limitations to the approach and criticism of quantified approaches to greening more generally including carbon reduction have grown within urban studies and related disciplines. While et al. (2010) argue that local or urban targets are likely to be restricted to those that can be achieved at the local scale. As such, they point to the challenge of needing to draw boundaries in order to quantify carbon emission in space. This is a real challenge in many urban jurisdictions where infrastructure provision and services (including energy, waste, transportation) are delivered across municipalities as illustrated by the example of Metro Vancouver. Holden and Larsen (2015: 12) raise concerns in respect to the use of indicators in the GCAP arguing that "The sense of objectivity embedded there, at the same time, may cast a smokescreen over whether the actions that are justified by it are also the most desired ones."

Critics point to flawed methodologies underlying the implementation process that undermine the credibility and effectiveness of the initiative such as specific building standards using certification schemes. Certification schemes including LEED^{vii} have been criticized for relying on technological fixes as 'light green' strategies, and discussions revolve around the transferability and adaptability of green building models (Boschmann and Gabriel, 2013; Faulconbridge, 2015). At the same time, tools like LEED that communicate and measure greening and green building more specifically were seen as extremely valuable in promoting urban greening. "I think LEED has done amazing things for [green building], for us as an industry, and it has allowed the mainstream to understand, in very simple terms, that a Gold building is better than a Silver building. But I think it has also become restrictive in some ways. It's clear that we're just chasing points." (Green building expert, Interview May 13, 2014)

This position was also voiced in respect to the GCAP targets that were generally seen as positive but there was some concern that a shift from achieving best outcomes to achieving set targets may actually reduce possible sustainability outcomes. One respondent provided the example of the climate adaptation strategy through the planting of 128,000 trees where trees may be planted in areas where planning was less costly and easier to implement (west side of Vancouver) rather than in industrial areas where mitigation impacts would have been much higher (former City Staff, Interview Nov. 10, 2014). Another criticism relates to the plan's ambition for perfection that places all actions under high scrutiny. The political exposure raises expectations towards perfectionism which may inhibit more radical experiments as innovations and prototypes are rarely perfect. While the GCAP elevated the issue of sustainability to the executive level, the public exposure of actions reduces the willingness to introduce new, untested and risky strategies. The majority of respondents shared the position that City leadership on sustainability had faltered recently in particular in regards to green building and that there was the risk for rhetoric to become separated from actions.

Respondents pointed to a number of weaknesses related to enforcement and implementation of GCAP goals. In respect to green building, criticism emerged around whether prescribed standards (e.g., LEED) are actually well suited to deliver best outcomes. Another aspect mentioned relates to the extent to which

building bylaws can be enforced properly without encouraging measures that seek to circumvent green building obligations (e.g., relative measures of energy efficiency can be changed by increasing expected occupancy numbers).

Further criticism takes a social justice perspective and points at possible links between green ambitions and scarcity of affordable housing. In the 2016 Global Real Estate Bubble Index (Obiko Pearson & Dmitrieva 2016), Vancouver ranked first due to a surge in housing prices. Some observers, however, point at the fact that other (partly external) factors (e.g. the international real estate business) might be more pertinent: “Though Vancouver’s green development may certainly have made it more desirable to middleclass residents and therefore contributed to rising housing costs (...), this cannot fully account for the extreme crisis of affordability the city is facing, a crisis that has hurt the middle class as well as the poor” (McKendry 2016: 1365).

6 Conclusion

Through its emphasis on quality of life, liveability and health, as well as through its participatory approach associating a wide range of actors, the GCAP seems to be bridging the economic, environmental and social dimensions of sustainability. Many observers in and outside Vancouver emphasize the plan’s comprehensive and pioneering character. Nevertheless, the foregrounded ambition for world leadership as well the focus on quantified measures raise questions. In Vancouver, green building and cognate urban sustainability policies and visions are clearly driven by political ambition for world leadership, and policy actions seem to be largely informed (if not motivated) by international ranking schemes and performance indicators. The political ambition has also been turned into a brand addressing different scales from the local to the global.

In most cases, the novelty of Vancouver-born policies is seen in the planning process rather than in set goals and targets. Procedural innovations through deliberate participatory approaches or the target-based and participatory implementation including the model of CityStudio have set standards that are recognized by peer cities even though the efficacy and potency of green leadership seems restricted to the North American context and does not reach the (at least rhetorically) targeted global scale. The CityStudio model has been successfully implemented in other Canadian cities, e.g. Calgary and Victoria and the idea is not shared beyond Canada. The participatory approaches are constituent elements of Vancouver’s reputation and are proactively integrated into branding efforts. While the 2015-2016 implementation update (City of Vancouver, 2016) records an increase of ‘empowered’ citizens of 12,800 from the 2011 baseline to achieve a lighter footprint (Fig. 2), the proxy doesn’t provide further information on whether residents will actually change behavior in support of set targets. Simultaneously, Vancouver is struggling with common problems to implement sustainability policies and deliver objectives. For example, while green standards for new buildings have been implemented, a greening of the existing building stock which consists of a large number of single and double family homes poses bigger challenges. Further, some implementation strategies may challenge other aspects of sustainability: rezoning measures, for example, may allow economic development but at the cost of stricter sustainability standards.

The majority of respondents voiced a certain level of disappointment regarding the GCAP which by some was seen to have lost its initial ambition for radical change. At least two former city staff felt their ability to bring change had been reduced after the conception and implementation of the GCAP. During the span of the research project, there was a noticeable move of experts and leaders from the City but also other employers to the University of British Columbia which was perceived to offer greater opportunities to test and implement green innovations, in particular, in respect to green building.

While there was no unanimous position by respondents on the success of the plan, findings from stakeholder interviews and observations in the region suggest that green leadership claims through policy boosterism bears the risk of selective or unbalanced action. Initiatives (e.g. in the green building sector) may well be serving reputational or accounting purposes, but they tend to neglect other sustainability related needs (e.g. affordable housing). While this impact may not be visible at the international scale, it has higher relevance at the local level. GCAP related policies may be challenged locally if local identification with its goals and the acceptance with the related measures decrease. 'Chasing numbers' – as one respondent put it – for the sake of being leader in global rankings might serve international reputation far more than being actually transformative at the local level, reconciling economic, environmental and social needs and expectations.

References

- Acuto, M. (2012) Ain't about politics? The wicked power-geometry of Sydney's greening governance. *International Journal of Urban and Regional Research* 36.2, 381-399.
- Anderberg, S. and E. Clark (2013) Green sustainable Öresund region – or eco-branding Copenhagen and Malmö? In I. Vojnovic (ed.) *Sustainability: A global urban context*, 591-610, Michigan State University Press. E-book.
- Andersson, I. (2016) 'Green cities' going greener? Local environmental policy-making and place branding in the 'Greenest City in Europe'. *European Planning Studies* 24.6, 1197-1215.
- Béal, V. (2011) Urban governance, sustainability and environmental movements: post-democracy in French and British cities. *European Urban and Regional Studies* 19.4, 404-419.
- Beatley, T. (2000) *Green urbanism: Learning from European cities*. Island Press, Washington, D.C.
- Beatley, T. and K. Manning (1997) *The ecology of place: Planning for environment, economy, and community*. Island Press, Washington, D.C.
- Bina, O. (2013) The green economy and sustainable development: An uneasy balance? *Environment and Planning C: Government and Policy* 31.6, 1023-1047.
- Boschmann E. E. and J. N. Gabriel (2013) Urban sustainability and the LEED rating system: case studies on the role of regional characteristics and adaptive reuse in green building in Denver and Boulder, Colorado. *The Geographical Journal* 179, 221-233.

- Braun E., M. Kavaratzis and S. Zenker (2013) My city – my brand: the different roles of residents in place branding. *Journal of Place Management and Development* 6.1, 18–28.
- Bulkeley H., V. Castan Broto, M. Hodson and S. Marvin (2011) *Cities and Low Carbon Transitions*. Routledge, Milton Park.
- Campbell S. (1996) Green cities, growing cities, just cities? Urban planning and the contradictions of sustainable development. *Journal of the American Planning Association* 62.3, 296–312.
- Cidell, J. (2015) Performing leadership: municipal green building policies and the city as role model. *Environment and Planning C: Government and Policy* 33, 566-579.
- City of Vancouver (1990) *Clouds of Change: final report of the City of Vancouver Task Force on Atmospheric Change*. Vancouver: Office of the City Clerk.
- City of Vancouver (2006) *Vancouver EcoDensity initiative*. Vancouver: Office of the Mayor.
- City of Vancouver (2009a) *Vancouver 2020 a bright green future*. Vancouver: City of Vancouver.
- City of Vancouver (2009b) *Greenest City Quick Start recommendations*. Vancouver: City of Vancouver.
- City of Vancouver (2011) *Greenest City 2020 Action Plan*. Vancouver: City of Vancouver.
- City of Vancouver (2013) *Greenest City 2020 Action Plan 2012-2013 implementation update*. Vancouver: City of Vancouver.
- City of Vancouver (2016) *Greenest City 2020 Action Plan 2015-2016 implementation update*. Vancouver: City of Vancouver.
- Fastenrath, S. and Braun, B. (2016) Sustainability transition pathways in the building sector: Energy-efficient building in Freiburg (Germany) *Applied Geography* (<http://dx.doi.org/10.1016/j.apgeog.2016.09.004>).
- Faulconbridge, J. (2015) Mobilising sustainable building assessment models: agents, strategies and local effects. *Area* 47.2, 116-123.
- Flint, J., and M. Raco (2012) *The future of sustainable cities: critical reflections*. Policy Press, Bristol.
- Francesch-Huidobro, M. 2015. Collaborative governance and environmental authority for adaptive flood risk: recreating sustainable coastal cities. *Journal of Cleaner Production* 107, 568-580.
- Harvey, D. (1982) *The limits of capital*. Blackwell, Oxford.
- Harvey, D. (1989) From managerialism to entrepreneurialism: the transformation in urban governance in late capitalism. *Geografiska Annaler B* 71.1, 3-17.
- Holden, M. and M.T. Larsen (2015) Institutionalizing a policy by any other name: in the City of Vancouver’s Greenest City Action Plan, does climate change policy or sustainability policy smell as sweet? *Urban Research & Practice*, DOI:10.1080/17535069.2015.1051382
- Kavaratzis, M. (2007) City Marketing: The Past, the Present and Some Unresolved Issues. *Geography Compass* 1, 695–712.
- Kavaratzis, M. and G.J. Ashworth (2005) City Branding: An Effective Assertion of Identity or a Transitory Marketing Trick? *Tijdschrift voor economische en sociale geografie* 96, 506–514.

- Konijnendijk, C.C. (2010) Green cities, competitive cities—promoting the role of green space in city branding. IFPRA World Congress Hong Kong, Hong Kong, November.
- Kotler, P. and D., Gertner (2002) Country as brand, product, and beyond: A place marketing and brand management perspective. *Brand Management* 4, 5.
- Lombardi, D.R., L. Porter and A. Barber (2011) Conceptualising sustainability in UK urban regeneration: A discursive formation. *Urban Studies* 48.2, 273–296.
- Long, J. (2016) Constructing the narrative of the sustainability fix: Sustainability, social justice and representation in Austin, TX. *Urban Studies* 53.1, 149–172.
- Lucarelli, A. and P.O. Berg (2011) City branding: a state-of-the-art review of the research domain. *Journal of Place Management and Development* 4.1, 9–27.
- Markard, J., R. Raven and B. Truffer (2012) Sustainability transitions: An emerging field of research and its prospects. *Research Policy* 41.6, 955–967.
- McCann, E. (2009) City Marketing. In R. Kitchin and N. Thrift (eds.), *International encyclopedia of human geography*, Vol. 2, 119–124, Elsevier, Oxford.
- McCann, E. (2013) Policy Boosterism, Policy Mobilities, and the Extrospective City. *Urban Geography* 34.1, 5–29.
- McKendry, C. (2016) Cities and the challenge of multiscale climate justice: climate governance and social equity in Chicago, Birmingham, and Vancouver. *Local Environment* 21.11, 1354–1371.
- Montgomery, A.F. (2015) Different futures for different neighborhoods: The sustainability fix in Detroit. *Ethnography* (online first doi: 10.1177/1466138115570460).
- Munro, A., J. Marcus, K. Dolling, J. Robinson and J. Wahl (2016) Combining forces: fostering sustainability collaboration between the city of Vancouver and the University of British Columbia. *International Journal of Sustainability in Higher Education* 17.6, 1–18.
- Newell, P. and D. Mulvaney (2013) The political economy of the ‘just transition’. *The Geographical Journal* 179.2, 132–140.
- Obiko Pearson, N. & Dmitrieva, K. (2016) Vancouver, London Top List of Cities at Risk of Housing Bubble. Bloomberg Markets. Available online: <https://www.bloomberg.com/news/articles/2016-09-27/vancouver-london-top-list-of-cities-at-risk-of-housing-bubble>
- Olazabal, M. and Pascual, U. 2015. Urban low-carbon transitions: cognitive barriers and opportunities. *Journal of Cleaner Production* 109, 336–346.
- Peck, J. (2010) *Constructions of Neoliberal Reason*. Oxford University Press, Oxford.
- Robertson, G. (2016) City View Vancouver. In The World Watch Institute (ed.) *Can a City be sustainable?* Washington, Island Press, 171–176.
- Rosol M. (2013) Vancouver’s ‘EcoDensity’ planning initiative: a struggle over hegemony? *Urban Studies* 50.11, 2238–2255.
- Rosol, M. (2015) Governing cities through participation—a Foucauldian analysis of CityPlan Vancouver. *Urban Geography* 36.2, 256–276.
- Sadler, R., E. Cleave, G. Arku and J. Gilliland (2016) A comparative analysis of place branding in Michigan and Ontario. *Urban Research & Practice* 9.1, 16–36.

- Scerri, A. and M. Holden (2014) Ecological Modernization or Sustainable Development? Vancouver's Greenest City Action Plan: The City as 'manager' of Ecological Restructuring. *Journal of Environmental Policy & Planning* 16.2, 261–279.
- Smedby, N. and Neij, L. 2013. Experiences in urban governance for sustainability: the Constructive Dialogue in Swedish municipalities. *Journal of Cleaner Production* 50, 148-158.
- Temenos, C. and E. McCann (2012) The local politics of policy mobility: Learning, persuasion, and the production of a municipal sustainability fix. *Environment & Planning A* 44.6, 1389–1406.
- The Economist Intelligent Unit (2014) A summary of the liveability ranking and overview. Available online: www.eiu.com (last accessed: 25/01/2017)
- Tretter, E. (2013) Sustainability and Neoliberal Urban Development: The Environment, Crime and the Remaking of Austin's Downtown. *Urban Studies* 50.11, 2222–2237.
- UNEP (2011) *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*. Available at: www.unep.org/greeneconomy (last accessed: 25/01/2017)
- Weichhart P. (1990) *Raumbezogene Identität. Bausteine zu einer Theorie räumlich-sozialer Kognition und Identifikation*. Franz-Steiner-Verlag, Stuttgart.
- Westerhoff, L. (2015) *City stories: from narrative to practice in Vancouver's Olympic Village*. Doctoral Dissertation. The University of British Columbia.
- While A., A. Jonas and D. Gibbs (2004) The environment and the entrepreneurial city. *International Journal of Urban and Regional Research* 28.3, 549–569.
- Wooliams J. (2014) Vancouver: City to Watch. *gb&d magazine* Sept/Oct. Available at: <http://gbdmagazine.com/2014/29-vancouver-feature/> (last accessed: 25/01/2017)
- Yin, Y., Rader Olsson, A. and Håkansson, M. 2016. The role of local governance and environmental policy integration in Swedish and Chinese eco-city development. *Journal of Cleaner Production* 134, 78-86.
- Zenker S. and S. Beckmann (2013) My place is not your place – different place brand knowledge by different target groups. *Journal of Place Management and Development* 6.1, 6-17.

Acknowledgements

This work was supported by the by the National Research Fund Luxembourg and the German Research Foundation (INTER_DFG/12-01/GreenRegio). We would like to thank all respondents for their time and valuable insights. Many thanks to Marit Rosol, Samuel Mössner, Elizabeth Rapoport and Anna Hult for their feedback on an early version of the manuscript. We also thank the seven anonymous reviewers for their valuable recommendations. The usual disclaimers apply.

-
- ⁱ The paper does not provide an analysis of tangible outcomes of the GCAP in reducing carbon dioxide emissions or other quantifiable measures.
- ⁱⁱ Vancouver holds a unique position through the Vancouver Charter that grants the city and its mayor greater independence and regulatory authority than other municipalities under provincial legislation.
- ⁱⁱⁱ The policy for sustainable large development prescribes defined plans and studies for developments involving land exceeding 8,000 sqm or containing over 45,000 sqm of new floor area. The Higher Buildings Policy requires a 40-50 % reduction in energy consumption from 2010 levels for new buildings with height allowances exceeding existing zoning restrictions.
- ^{iv} C40 - Cities Climate Leadership Group is a self-organized network of currently 90 megacities on all continents (see <http://www.c40.org/>)
- ^v ICLEI - Local Governments for Sustainability (founded in 1990 as the International Council for Local Environmental Initiatives) is a global network of more than 1,500 cities, towns and regions committed to sustainable development strategies (see <http://www.iclei.org/>)
- ^{vi} American Society of Heating, Refrigerating and Air-Conditioning Engineers
- ^{vii} Leadership in Energy and Environmental Design. A certificate assigned by the U.S. Green Building Council for resource efficient buildings (see <http://www.usgbc.org/leed>)