When opportunity backfires: exploring the implementation of urban climate governance alternatives in three major US cities

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ABSTRACT

Around the world, cities have committed themselves to urban climate action strategies with targets that go beyond those of their national governments. To implement their strategies, cities have embraced a range of alternative governance instruments and approaches (‘governance alternatives’). While they have long been lauded by academics, policymakers, and practitioners for doing so, these ‘frontrunner’ cities are now being seen to struggle to achieve their ambitious targets when using governance alternatives. This article seeks to unpack and better understand this struggle by zooming in on the progress made in reducing (non-renewable) energy consumption in the built environment of three major cities in the United States (Chicago, New York, and San Francisco) over the last decade. Informed by interviews and supplementary data, the article uncovers a pattern across these three cities. In the early 2000s, they all set ambitious urban climate change targets, but lacked the power and capacity to achieve these. They all used a largely uncoordinated ‘scattergun approach’, embracing a broad set of (at best) modestly ambitious and (regularly) opportunistic governance alternatives to achieve the aims of their ambitious strategies. Whilst this approach allowed the cities to obtain quick initial results, the resulting fragmented configuration of traditional and alternative governance instruments and approaches now hinders them from meeting their targets.

KEYWORDS
Urban climate governance; governance innovation; environmental policy integration (epi); governance fragmentation; opportunity trap

Introduction

Over the last two decades, cities have taken central stage in climate change governance. It is now widely acknowledged that they are particularly vulnerable to the consequences of climate change (Brenner, 2004), and that they are point sources of the resource consumption and waste production that contributes to climate change (Van der Heijden, 2014). However, cities are also widely considered as sites of opportunity for climate action (Romero-Lankao, 2009), with some commentators going so far as to consider cities as savours of the planet in the face of climate change (Streck, Keenlyside, & von Unger, 2016). These hopes build largely on two related trends in urban climate governance. First, cities
have begun to commit to progressive urban climate strategies (often more ambitious than those of the nation states to which they belong). Second, cities have embraced a wide variety of traditional and ‘novel’ urban climate governance instruments to achieve their ambitious climate change targets (for recent reviews of the literature, see among others Gordon, 2018; Hughes & Hoffmann, 2020; Lamb, Callaghan, Creutzig, Khosla, & Minx, 2018; Romero-Lankao, Burch, & Hughes, 2018; van der Heijden, 2019).

Broadly speaking, when cities are governing urban climate action they can rely on traditional, mandatory governance interventions such as building codes and planning legislation (IEA, 2013). These interventions have, for long, created a relatively safe and healthy urban environment – albeit that these privileges are not shared equally around the world (Taylor, 2013). However, they often fall short in addressing the urgent challenges and complex causes of climate change (Rosenzweig et al., 2018). Since the 1990s, alternatives that seek to avoid the shortcomings of traditional urban climate governance instruments and approaches have mushroomed. They include (voluntary) certification programmes, innovative forms of financing, and a variety of experimental settings that seek to develop knowledge of urban climate transformations (examples are discussed in what follows). They are often developed and implemented by city governments, in collaboration with citizens, businesses, NGOs, and other cities, to reduce city-related greenhouse gas emissions and to change urban lifestyles (Hoffmann, 2011).

These urban climate governance alternatives typically do not replace traditional ones, but rather complement and expand them (Johnson, 2018). Scholars of urban climate governance have been particularly vocal about the promise that such governance alternatives can achieve the ambitious climate change targets set by cities (Bulkeley, 2010; Rosenzweig, Solecki, Hammer, & Mehrotra, 2010). However, a counter-narrative has recently begun to emerge. A growing number of observations indicate that, around the globe, the cities that were initially heralded as frontrunners in urban climate governance, because of their ambitious climate change strategies and their embrace of governance alternatives, appear to be struggling to achieve results (Hsu et al., 2020; Van der Heijden, 2017). It remains unclear what exactly explains this struggle. The broader urban climate governance literature hints at a tension between the alternatives as a ‘new’ way of governing climate action (Persson & Runhaar, 2018; van Stigt, Driessen, & Spit, 2013) and the ability of city governments to use these alternatives effectively within their broader urban governance agendas (CDP, 2019; Markolf, Azevedo, Muro, & Victor, 2020).

This article seeks to unpack and better understand this struggle. It presents a study of three cities in the United States that have long been characterized as frontrunners of urban climate action but that are now struggling to keep up their results (Chicago, New York, and San Francisco). The research approach followed is abductive – a process of moving back and forth between theory and data to understand the struggle (Paavola, 2004). The study seeks to understand why these cities, which on paper show much promise (ambitious climate action strategies, political will, and so on) – to speak with the introduction to the special issue, the cities have a high level of systemic institutional capacity, Domorenok, Graziano, & Polverari, 2021), do not see the expected results of the broad variety of urban climate governance alternatives they have embraced over recent decades. This article homes in on a set of 20 governance alternatives for urban climate action, with a focus on reduced (non-renewable) energy consumption, that are illustrative of the broader landscape of the governance alternatives embraced by the
cities. From this study, it becomes clear that the cities not only have a high level of institutional capacity, they also have (access to) a substantial level of individual capacity. Yet, lacking strong organizational institutional capacity, the whole of the governance alternatives does not become larger than the sum of its parts. To paraphrase the authors of the introduction to this special issue: all three dimensions of institutional capacity (systemic, organizational, and individual) need to be in place and work together to achieve effective policy integration (Domorenok et al., 2021).

The remainder of the article first explores the alternative urban environmental governance instruments and approaches (‘governance alternatives’) that have emerged over the last three decades. This is done to understand the opportunities and constraints that have been linked to them in the broader literature. From there, it evaluates the experiences with a set of 20 governance alternatives embraced by the three cities in the United States. The article finds a related pattern across the three cities: they have taken a ‘scattergun approach’ by implementing an (often) uncoordinated and broad set of (at best) modestly ambitious and (regularly) opportunistic governance alternatives to achieve the targets of their ambitious strategies. Whilst this allowed the cities to ‘hit the ground running’ in the late 1990s and early 2000s, the highly fragmented landscape of traditional and alternative governance instruments and approaches that they now have to work with impedes them in meeting their targets. The article concludes by discussing the broader implications of this pattern.

**Background: why cities have embraced climate governance alternatives**

Since the late 1990s, and particularly in the Global North, city governments have been introducing climate action strategies and targets that are often more ambitious than those set by their national governments (Romero-Lankao, 2009; Streck et al., 2016). City governments have, however, limited power and capacity to achieve their ambitions. The regulation and governance of climate change mitigation and the adaptation of buildings and infrastructure is typically a responsibility of higher levels of government (Garvin, 2014). More problematically, traditional governance interventions for urban climate action (such as building codes and planning legislation) often fall short in addressing the urgent challenges and complex causes of climate change. These traditional interventions are slow to achieve their results (UNEP, 2007); their development requires considerable technical expertise (World Bank, 2011); their enforcement asks for substantial institutional capital (UN, 2014); and they often allowing existing development to be exempted from new requirements under grandfathering clauses (Rosenzweig et al., 2018).

Seeking to overcome these challenges, cities around the globe have begun to embrace alternative (urban) climate governance instruments and approaches (Tews, Busch, & Jörgens, 2003)¹ such as alternative forms of financing, certification and benchmarking, and action and information networks (Van der Heijden, 2016, illustrations are provided in what follows; see also Table 2).

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¹The type (or class) of governance alternatives embraced by cities has been captured by a variety of terms. These terms include New Environmental Governance (NEG) (Holley, Gunningham, & Shearing, 2012), New Environmental Policy Instruments (NEPI) (Jordan, Wurzel, & Zito, 2013), Non-State Market Driven governance (NSDM) (Cashore, Auld, & Newsom, 2004), Voluntary Environmental Programs (VEP) (Prakash & Potoski, 2012), New Urban Governance (NUG) (Bingham, 2006), and Voluntary Environmental Governance Arrangements (VEGA) (Van der Heijden, 2012).
**Key differences between the ‘old’ and the ‘new’**

Two central differences between traditional governance interventions and these governance alternatives are relevant (Persson et al., 2018). The first is a difference in process: the alternatives are often developed and implemented by those who govern and those who are governed (Bingham, 2006). It is expected that the involvement of a wide range of stakeholders in the development and implementation of alternatives allows the tacit knowledge of these stakeholders to be used. This is expected to result in governance instruments and approaches that are ‘smarter’ than those developed by somewhat distant bureaucrats (De Búrca & Scott, 2006). Also, the involvement of a range of stakeholders means that the alternatives can be developed through a consensus-building process that allows for a reflection on the advantages and disadvantages of the alternatives for the various parties involved. This is expected to bridge the stakeholders’ diverse and sometimes rival views (Bulkeley & Mol, 2003). It is, moreover, expected to increase the acceptance of the alternatives and, correspondingly, to improve compliance with them because of a shared sense of responsibility for climate action (Scott & Trubek, 2002).

The second is a difference in their design: the governance alternatives move away from traditional deterrence-based hard law interventions that penalize non-compliance, such as building codes, towards soft law interventions that reward compliance and provide positive incentives. The positive incentives come, for example, in the form of information, the ability to market compliant behaviour, or some form of financial compensation and are, again, expected to increase compliance (Scott & Trubek, 2002). Also, rather than setting a mandatory minimum bottom line that must be met, the alternatives typically ask for voluntary commitments, again expecting that compliance is more likely when individuals and firms make voluntary commitments than when they are mandated to comply (Van der Heijden, 2012). Finally, the alternatives move away from prescriptive rules that specify how compliance should be achieved, towards the use of performance-based standards to allow those who are governed (some) flexibility in the way in which they comply. This is expected to make them more willing to move beyond mere bottom-line compliance (Carrigan & Coglianese, 2011).

**Increased fragmentation of the urban climate governance landscape**

These governance alternatives are typically introduced as complements to traditional governance approaches and instruments, rather than substitutes (Johnson, 2018). Logically, the embracing of governance alternatives has increased the complexity of the (local) urban climate governance landscape. In many countries around the world, and specifically in the Global North, the traditional urban policies and regimes are highly complex ‘layered’ mixes of different interventions, strategies, and (political and urban) philosophies, with their roots in the early twentieth century (Van der Heijden, 2014). However, while they are complex and layered, these policies and regimes have often been developed slowly and carefully, to ensure that new additions even out flaws in the existing landscape or enable the landscape to deal with new emerging problems (Davidson & Martin, 2014). By contrast, the governance alternatives that have mushroomed since the 1990s have often been added as quick ‘patches’ to the existing landscape (cf., Howlett & Rayner, 2013). This tendency to add ‘patches’ is not difficult to understand. Obviously, city governments were seeking ways to achieve their ambitious climate strategy targets in the late 1990s and early 2000s, but they often lacked the capacity, or the time, or both, to
change the existing traditional urban climate governance interventions at their disposal (i.e., planning legislation and building regulation) (IPCC, 2018).

In developing governance alternatives, however, city governments typically face a related lack of development capacity – their staff lack the knowledge, skills and expertise to develop these governance alternatives, they do not have the financial means to roll out ambitious programmes, and so on (Koop et al., 2017). Through collaborations with, and experiments involving, non-governmental individuals and organizations, cities gain access to the expertise and capacity they need (Carter et al., 2015). Moreover, non-governmental individuals and organizations have sometimes already developed governance alternatives that cities can use ‘off the shelf’ (Van der Heijden, 2017). The result of these developments is that the already complex urban climate governance landscape has become even more fragmented (Bulkeley, 2019). A part of the literature on governance alternatives embraces this increased fragmentation as a positive development, expecting it to provide highly tailored solutions to local urban climate challenges (Brenner, 2004; Bulkeley, 2010; Streck et al., 2016). However, over recent years another body of literature has emerged, questioning whether these governance alternatives may not be causing a new set of problems that hamper cities’ capacity to meet their targets (Gordon, 2018; Gupta, Pfeffer, Verrest, & Ros-Tonen, 2015; Hughes, 2019; Trencher et al., 2016).

**Research design**

Cities that were initially heralded as frontrunners in urban climate governance because of their ambitious climate change strategies and their embrace of governance alternatives are now found to be struggling to achieve results (Hsu et al., 2020; Van der Heijden, 2017). It remains unclear why this is happening. To gain a better understanding of this struggle, experiences with governance alternatives in three cities in the United States (Chicago, New York, and San Francisco) are studied in what follows. These cities are illustrative of the type of frontrunner cities in urban climate governance that are often discussed in the literature.

For some two decades, Chicago, New York, and San Francisco have had some of the world’s most ambitious urban climate strategies in place, typically outpacing those of the United States federal government and even of the governments of the states in which they are located (City of Chicago, 2008; City of New York, 2019; City of San Francisco, 2019). Likewise, the three cities are all examples of early adopters of urban climate governance alternatives (C40, & Arup, 2017; Kalafatis, 2018), and a rich collection of literature is available with individual and comparative case studies of these alternatives for all the cities (e.g., Ekstrom & Moser, 2014; Hughes, 2019; Lambright, Chiangnon, & Harvey, 1996). In addition, these cities are all regional (and even global) centres of finance, commerce, and education, and such centres are typically correlated with high numbers of firms and citizens that feel a need to combat climate change (Lee & van der Heijden, 2019). Finally, all three cities were initially lauded for their climate action ambitions and activities, but are now reportedly struggling to meet their ambitious targets (as documented by, among others, Byrne, 2020 for Chicago; Gonen, 2020 for New York; Jones,

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2The cities central to this article (Chicago, New York, and San Francisco) were studied as part of a broader research project that involved a larger number of cities in a larger number of countries (REMOVED FOR REVIEW).
2020 for San Francisco). In sum, all three exemplify cities that have ambitious climate action strategies and a range of governance alternatives in place, on paper have all that it takes to be successful in achieving their ambitions, but in practice fail to succeed.3

As explained in the introduction to this article, the aim here is to unpack and better understand the struggle of frontrunner cities to achieve their ambitious climate action targets by (among other things) embracing a set of governance alternatives. As also explained in the introduction, the broader urban climate governance literature hints at a tension between the alternatives as a ‘new’ way of governing climate action and the ability of city governments to use these alternatives effectively within their broader urban governance agendas. Therefore, this study homes in on a set of governance alternatives that the three cities have embraced to achieve their urban climate action ambitions.

Data collection and analysis
Between 2013 and 2015, a total of 20 governance alternatives with a focus on the energy efficiency of buildings were studied in Chicago, New York, and San Francisco. In 2020, a follow-up study was carried out for these three cities to update the data and refine the initial findings. Examples from the set studied are provided in what follows (see also Table 2).

The 20 governance alternatives were selected from a larger pool of alternatives that were identified through internet searches and desk research. They were selected for three reasons. First, they represent the most common designs of urban climate governance alternatives: innovative forms of financing (e.g. PACE, Billion Dollar Green Challenge), certification and benchmarking (e.g. LEED, Energy Star Building), and action and information networks (e.g. Chicago Green Office Challenge, NYC Carbon Challenge). Second, together they represent government-initiated alternatives (e.g. NYC Retrofit Accelerator, Small Business Improvement Fund), alternatives initiated by non-governmental organizations that have been embraced by city governments (e.g. LEED, Billion Dollar Green Challenge), and collaborative initiatives in which governmental and non-governmental actors join forces (e.g. Chicago Green Office Challenge, PACE). Third, they represent ‘purely’ local alternatives (e.g. Energy Watch, Small Business Improvement Fund) and national ones that are adopted locally (e.g. Billion Dollar Green Challenge, PACE). In sum, the set of 20 governance alternatives here can be understood as illustrative of the broader trend of alternative instruments and approaches described above.

Data collection and processing followed the conventional practice for this type of research (Brady & Collier, 2004). The main data obtained for analysing the governance alternatives were readily available from websites, academic and grey literature, existing policy reports, and other sources. New data were obtained through a series of face-to-face interviews in 2013 and 2014, and by online follow-up interviews in 2020 (by teleconferencing and email). The aim of these interviews was to fill the gaps in the data from other sources, to resolve conflicts in the data from other sources, and to gain additional insights into the alternatives under scrutiny. The interviewees were traced through internet searches and social networking websites, particularly LinkedIn. In total, 20 interviewees

3Despite these broad similarities, the cities are all in different states, meaning they are all subject to slightly different state-level climate change and environmental policies, and they show a relevant level of regional diversity (East-Coast, Mid-West, and West-Coast). This allows us, to some extent, to exclude the state-level policies and the regional variance as explanatory conditions for the phenomena of interest (Ragin, 2004).
Table 1. Overview of interviewees and their backgrounds.

| Interviewee background                      | Government | Non-government |
|---------------------------------------------|------------|----------------|
| Policymaker                                 | 3 (1 C/1 N/25)* | 6 (5 C/4 N/45) |
| Administrator                               | 3 (2 C/2 N/25) | 6 (5 C/4 N/45) |
| Architect, engineer, advisor                | 2 (1 C/2 N/15) |                |
| Contractor, developer, property owner       | 4 (3 C/4 N/25) |                |
| Other                                       | 2 (1 N/15)   | 12             |
| **Total**                                   | 8           | 12             |

* The interviewees were typically able to provide information on governance alternatives in different cities: of the 20 individuals interviewed, 12 provided information on Chicago (C), 14 on New York (N), and 12 on San Francisco (S). The numbers in brackets illustrate this; for example, of the three policymakers interviewed, one discussed Chicago alternatives only, one discussed San Francisco alternatives only, and one discussed both New York and San Francisco alternatives (this results in the combination 1 C/1 N/25).

from various backgrounds, including government, the private sector, and non-profit organizations, were included – see Table 1. The interviewees were selected because they had in-depth knowledge about one or more of the governance alternatives studied, or about how the alternatives are included in and contribute to the cities’ broader urban climate governance regimes. In short, they were people involved in the design and implementation of the alternatives (to gain an understanding of why a specific governance alternative was chosen and how it performs), and city government staff involved in the broader roll-out of urban climate action strategies (to gain an understanding of whether and how the governance alternatives make a meaningful contribution to achieving the cities’ ambitions). The interviewees were often aware of, and involved in, more than one governance alternative, and some interviewees were involved in two or more of the three cities (the latter is clear from Table 1). It is expected that this helped to overcome a sampling bias of interviewees who were overly enthusiastic about their ‘own’ governance instrument or approach, or about their ‘own’ city (Sanderson, 2002).

The interviews were recorded and, based on the recordings and the notes taken during the interviews, summary reports were drafted that were returned to the interviewees for validation. The initial interviews lasted for approximately one hour, and they were generally conducted at the interviewee’s work location. The interview data and additional data were processed by means of a systematic coding scheme and qualitative data analysis software (Atlas.ti). Using this approach, the data were systematically explored, and insight was gained into the ‘repetitiveness’ and ‘rarity’ of data points. Each of the governance alternatives was analysed by asking the following questions (which also guided the semi-structured interviews): What initiated the development and implementation of the governance alternative? Who are the main actors involved, and how are they involved? How does the governance alternative perform in terms of attracting targeted participants? How does it perform in changing their behaviour? How does the full set of governance alternatives contribute to the achievement of the city’s urban climate action ambitions?

Findings

Table 2 summarizes the performance of an exemplary subset of the governance alternatives (using data from various documented sources). The overall pattern that emerges from Table 2 largely confirms the broader urban climate governance literature (cf., Gordon,
Table 2. Snapshot of governance alternatives studied in Chicago, New York, and San Francisco.

| Name                              | Brief description                                                                 | Uptake (relative to targeted pool) | Success in changing target's performance (average or range) | Performance in perspective                                                                 |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Billion Dollar Green Challenge    | Challenges colleges and universities to set up self-managed revolving loan funds for building retrofits; sole focus on existing commercial property. | 1%.                               | Reduction of at least 20% in energy consumption.           | Futile compared to the energy consumption of educational facilities in the cities included.    |
| (2011; Chicago, New York, San Francisco) |                                                                                     |                                    |                                                          |                                                                                               |
| Chicago Green Office Challenge    | Friendly competition between commercial tenants to reduce office energy consumption. It provides information to participants about how to reduce energy use. | Less than 1%.                      | Reduction of at most 10% in energy consumption.            | Insignificant compared to Chicago’s commercial building energy consumption.                    |
| (2008; Chicago)                   |                                                                                     |                                    |                                                          |                                                                                               |
| Energy Efficient Mortgage         | Voluntary mortgages for (future) homeowners to make energy efficiency improvements to new or existing residential property. | Less than 1% (in the cities included). | Unknown (no data available).                             | Futile compared to residential building energy consumption in the cities included.             |
| (1995; Chicago, New York, San Francisco) |                                                                                      |                                    |                                                          |                                                                                               |
| Energy Star Building              | Governance alternative for energy efficient commercial property. Applied in new and existing commercial property market. | Approximately 5% (in the cities included; considerably lower across the United States). | Reduction of at least 20% in energy consumption (but paper performance*). | Approximately 1% of commercial building energy consumption in the cities included.             |
| (1999; Chicago, New York, San Francisco) |                                                                                       |                                    |                                                          |                                                                                               |
| Energy Star for Homes             | Governance alternative for energy efficient residential property. Dominant application is in new residential property market. | Approximately 10% (in the cities included; considerably lower across the United States). | Reduction of at least 20% in energy consumption (but paper performance*). | Approximately 1.5% of residential building energy consumption in the cities included.         |
| (1999; Chicago, New York, San Francisco) |                                                                                       |                                    |                                                          |                                                                                               |
| Energy Watch                      | Offers energy efficiency services and financial incentives to qualifying commercial customers and multi-family building owners. | Less than 5%.                      | Reduction of at most 20% in energy consumption.            | Less than 1% of San Francisco’s greenhouse gas emissions.                                     |
| (2006; San Francisco)             |                                                                                     |                                    |                                                          |                                                                                               |
| Green Roof Property Tax Abatement | One-time property tax abatements to property owners who install green roofs on their buildings. | Less than 1%.                      | Unknown (no data available).                             | Futile compared to the roof space in New York City.                                           |
| (2008; New York)                  |                                                                                     |                                    |                                                          |                                                                                               |
| LEED                              | Holistic sustainable building programme. Dominant application is in new commercial property market. | Over 25% of new office buildings (in the cities included; considerably lower across the United States). | Reduction of at least 20% in energy consumption (but paper performance*). | Under 5% of commercial building energy consumption in the cities included.                     | (Continued)
Table 2. (Continued).

| Name (introduction year; location) | Brief description | Uptake (relative to targeted pool) | Success in changing target's performance (average or range) | Performance in perspective |
|------------------------------------|------------------|-----------------------------------|---------------------------------------------------------------|-----------------------------|
| **NYC Carbon Challenge** (2007; New York) | Governance alternative for reducing carbon emissions related to commercial property. It brings together the New York City government and commercial property owners. It aims to achieve a 30% reduction over a 10-year period (it was continued after its initial 10-year period). | 9%. | Reduction of between 10 and 20% in greenhouse gas emissions. | Approximately 1% of commercial building greenhouse gas emissions in New York City. |
| **NYC Retrofit Accelerator** (2015; New York) | Offers building owners and managers free, personalized advisory services that streamline the process of making energy efficiency improvements to buildings. The city’s extensive databases are used to target the most promising buildings. | 8%. | Reduction of between 20 and 40% in energy consumption. | Approximately 3% of existing building energy consumption in New York City. |
| **PACE** (2008; Chicago, New York, San Francisco) | Allows municipalities to issue bonds for building retrofits. Applies in 30 states in the United States. | Less than 5% (in the cities included; considerably lower across the United States). | Reduction of between 20 and 40% in energy consumption. | Futile compared to commercial and residential building energy consumption in the cities included. |
| **Retrofit Chicago Energy Challenge** (2012; Chicago) | Governance alternative for reducing carbon emissions related to commercial property. Brings together the City of Chicago government and the city’s major property owners; strong focus on existing commercial property. It requires participants to reduce their energy consumption by at least 20% within five years of joining. | Over 80% (of 125 major buildings). | Reduction of between 10 and 20% in energy consumption. | Approximately 15% of Chicago’s office building energy consumption. |
| **Small Business Improvement Fund** (2000; Chicago) | Provides grant support for remodelling of commercial and industrial properties through tax increment financing. Grants are issued to the most promising proposals. | Less than 5%. | Reduction of less than 20% in energy consumption. | Insignificant compared to Chicago’s commercial building energy consumption. |

Source: REMOVED FOR REVIEW. Abbreviations: LEED = Leadership in Energy and Environmental Design; PACE = Property Assessed Clean Energy.

† The qualitative descriptor ‘futile’ indicates a maximum of 0.5%.

* The term ‘paper performance’ indicates that these are expected reductions, not observed reductions; most certificates have been issued for the design of a building and not the performance of a building in operation (this issue is well explained in, among others, Horvat & Fazio, 2005; Van der Heijden, 2015).
2018): overall, the alternatives attract a marginal number of the individuals, organizations, or objects that they target (the ‘Uptake’ column), or they produce at best a modest change in the behaviour of the targets they attract (the ‘Success in changing target’s performance ’ column), or both, are true. In combination, this means that the alternatives studied at best contribute marginally to helping the cities achieve their climate change ambitions of reducing carbon emissions and building-related energy consumption by 50 to 100% by a date between 2030 and 2050 compared to the 1990 numbers (the ‘Performance in perspective’ column) – but often their contribution is futile.

The interviewees provided a range of insights that explain this, at best, marginal contribution of the governance alternatives to the achievement of the cities’ climate action ambitions – and again, these insights resemble what is found in the broader urban climate governance literature. The alternatives are often found to attract niche cohorts of individuals and organizations (those who are already willing to act on climate change within the cities in which the alternatives operate, and who have the means to do so), but they appear to be less successful in addressing large cohorts and creating a critical mass (also reported by Hughes, 2019). As one of the interviewees who had experience with multiple governance alternatives mentioned, ‘You don’t get the ones who don’t have some basic understanding or are already a bit concerned about sustainability. That is a hard lesson we have learnt … we are constantly engaging with the same people’ (int.17). The governance alternatives appear relatively promising in addressing the relatively easy urban climate challenges of these cities, such as the construction of energy efficient new buildings (see, for example, the performance of LEED), but they are less successful in addressing more complex challenges such as the retrofitting of existing buildings (also reported by Trencher et al., 2016). In a related vein, targets do not comply with the governance alternative to which they ‘commit’, or are attracted to an alternative for self-interested reasons rather than a true willingness to act (also reported by Gupta et al., 2015). In sum, this study supports the growing literature that points to the struggle experienced by frontrunner cities in achieving their ambitious climate action targets through governance alternatives. However, there is more at stake.

**Delving deeper: why and how were these alternatives embraced?**

When the interviewees were questioned about why and how these governance alternatives were chosen in the three cities, their overall answers indicate that the alternatives were embraced, developed, and implemented in a rather quick and haphazard way. As a San Francisco city administrator explained in 2013, ‘We’ve never tried to [achieve building related energy reductions] on this scale. But you have to put it in perspective. We are putting the pieces together [referring to the various governance alternatives embraced at that time], but it is a huge undertaking that will take time’ (int.02). Indeed, the initial urban climate action strategies of the 2000s asked these cities to do something unprecedented: to achieve ambitious targets, but to do this without the power or authority to mandate developers, property owners, and users to cut the energy consumption and emissions of their buildings (bearing in mind that the cities have limited power to change traditional governance interventions such as building codes and planning legislation). Also, the urban climate action strategies cut across the

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4To maintain anonymity, each interviewee was given a number that is used consistently throughout this article.
traditional siloes of urban policy and planning (buildings, transport, infrastructure, public safety, etc.), and city staff and agencies often did not have the expertise or skills to develop and implement ‘holistic’ urban climate actions. In sum, the interview accounts (mainly from city policymakers) explain that, in the early 2000s, the three cities often did not have the capacity to develop holistic approaches to achieving building-related energy consumption and related emission reductions.

However, the cities could adopt governance alternatives that were readily available at that time. For example, the three cities were early adopters of Property Assessed Clean Energy (PACE; discussed with int.02, int.09, and int.16), an alternative governance instrument launched in 2008 by the non-profit organization PACENation. PACE helps property owners to access long-term loans for energy retrofits and upgrades. A loan is sought from a local government, and PACE provides a framework and guidelines for an agreement between the government and the property owner about how the loan is to be used. Under PACE, the local government issues a bond on behalf of the property owner that can be purchased by a third-party finance provider. After obtaining the funds, the local government passes them to the property owner who uses them for an energy efficiency retrofit or upgrade in accordance with the agreement. The local government recoups these funds – with interest – through an additional property tax on the property, and pays back the funds and interest to the finance provider. To impose the tax, PACE requires that the state and the local government enacts legislation that allows for PACE financing.

The cities were also able to integrate external governance alternatives in their climate action strategies. For example, the three cities were early adopters of Leadership in Energy and Environmental Design (LEED; discussed with int.03, int.12, int.13, and int.18), a governance alternative that allows property owners to showcase the energy efficiency of their buildings through a certificate. The cities have all put in place incentives for the use of LEED certification for new buildings and major retrofits. In 2005, Chicago launched a Green Permit programme that offers an expedited development permit process for buildings that meet the LEED certification criteria. Also in 2005, New York passed a law (Local Law 86) that requires building projects receiving a specified amount of city funding to achieve a mid-tier LEED rating level. In 2008, San Francisco passed the Green Building Ordinance, which requires commercial buildings of between 5,000 and 25,000 square feet to complete a LEED checklist, and buildings larger than 25,000 square feet to achieve mid-tier LEED certification. Effectively, this has resulted in a situation in which a voluntary governance alternative developed by non-governmental organizations is now a (de facto) mandatory requirement for specific building projects in these cities.

Finally, the interviewees explained that some of the more tailored and local governance alternatives were the result of chance opportunities that presented themselves (and were opportunistically embraced by the cities). An illustrative example here is the Chicago Green Office Challenge (discussed with int.14). The challenge is a friendly competition between office users and seeks to incentivise them to reduce their energy consumption. It rewards those office users who achieve the largest reduction over a set period, and it shares experiences and best practice on how to reduce office energy consumption, exclusively with those participating in the challenge. The governance alternative was developed in 2009 by the City of Chicago in collaboration with ICLEI,
one of the world’s largest city networks (the International Council for Local Environmental Initiatives, now known as Local Governments for Sustainability). ICLEI was interested in piloting an energy-efficiency competition between office users, and it found a willing collaborator in the City of Chicago. The pilot instrument was successful and was rolled out in other cities; it was also continued in Chicago in the following years (ICLEI, 2012).

In sum, the interviewees explained, these governance alternatives were, at least for some time, the only (readily) available way forward for the cities to pursue their ambitious urban climate strategies and goals. They allowed the cities to target a variety of audiences (property developers, property owners and users), a variety of building types (large and small, commercial and residential, new construction and retrofits), and a variety of ways to reduce the energy consumption of buildings (technological and behavioural). Over the years, the cities have relied heavily on these alternative instruments and approaches to achieve improvements in the energy efficiency of buildings and reductions in building-related emissions. However, unlike the approach to traditional urban policy and planning interventions, there was little in the way of a search for unity between the alternatives and the existing landscape of urban policies and planning regulation. In each city, the full configuration emerged rather haphazardly by using off-the-shelf alternatives (such as PACE), by supporting existing alternatives (such as LEED), and by embracing opportunities for developing alternatives when they presented themselves (such as the Chicago Green Office Challenge). This uncoordinated approach was already worrying some of the interviewees in the early stages of the study. For example, a representative of the green building sector in San Francisco expressed these concerns in 2013: ‘Everyone moves in the same direction [referring to the various governance alternatives embraced at that time], but hardly anyone is working together. Some do, but most are in their own little tower. A future of things would be to seek more synergy between the parties and initiatives’ (int.20).

Delving even deeper: what risks come with embracing governance alternatives in this manner?

When delving more deeply into the available data and after holding further discussions with the interviewees about the performance of the governance alternatives, it becomes clear that the ‘scattergun approach\(^5\) used by these cities – the uncoordinated embracing of a broad set of (at best) modestly ambitious and (regularly) opportunistic governance alternatives – may have backfired.

The uncoordinated approach to governance alternatives has resulted in unintentional relationships between them. A less desirable relationship emerges, for example, when the governance alternatives must compete for the same pool of prospective participants or the same pool of external funds and other support. After all, the success of these alternatives is often found in (or at least reported through) the number of participants they attract, or the change they achieve in the participants’ behaviour, or both – and external support and long-term continuation of the alternative depends on such success (Van der Heijden, 2017). For one of the governance alternatives studied (anonymized on

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\(^5\)This term is typically used for strategies where a large area or population is targeted with a broad variety of incentives (e.g. Crawford, 2006).
request) this meant that its administrators decided in 2013 to ‘keep the [performance] data to ourselves for now. We are being compared to other programs. Programs that run much longer. We will show our data when there are clear successes to show’ (int.15). Still, at that time, a considerable number of ‘success stories’ were reported on this governance alternative’s website. While other interviewees were less candid about what performance data they did, and what data they did not, report (and why), the contrast between the observed performance of the governance alternatives as reported in Table 2 and the ‘success stories’ reported on the websites of these alternatives and in other outlets is equally striking. Illustrative is this example from Retrofit Chicago: ‘After our first launch, which was 14 buildings, we had an advertisement in the newspaper praising these buildings for being good for the community’, an administrator shared (int.05). However, at that time little more could be reported than an expressed commitment of the owners of these 14 buildings and their intentions to reduce the energy consumption of their properties (Daily Herald, 2012). Particularly at the early stages of these governance alternatives, this tendency to (at least) selectively report performance may have resulted in (at least) an inflated expectation of what could and could not be achieved with them.

Likewise, because of their (uncoordinated) relationships and interdependencies, the configuration of governance alternatives is a vulnerable ecosystem. For example, the administrators of the Chicago Green Office Challenge observed that this governance alternative was often a gateway for participants to join other alternative instruments and approaches that asked for higher commitments (int.14). The Challenge raised participants’ awareness about their energy consumption and, once they were convinced that they wished to reduce this significantly, they could apply for PACE funding to carry out retrofits and seek a high-level LEED certification. The Chicago Green Office Challenge fulfilled an important gateway function between governance alternatives. However, because the Challenge was not deeply integrated into Chicago’s urban environmental policies, it continuously ran the risk of being terminated because of political or financial constraints. For example, in 2011, three years after its launch, the management of the Challenge was transferred (when the city disbanded its environmental department) from the City of Chicago to a non-profit organization, and its funding was changed from direct support by the city to a sponsoring agreement with a major homeware retailer. This resulted in some frictions (the city did not want to be seen as hand-in-glove with the sponsor, but it did want to have the programme branded as Chicagoan) as well as practical changes to the instrument (which may have been disruptive to some participants). In 2015, the last competition was held, and the instrument was terminated because the funding came to an end. While this termination is unlikely to have a direct impact on the city’s climate change targets (see Table 2), it may have a longer term and possibly severe indirect impact, now that the Challenge can no longer fulfil its gateway function and steer participants towards joining governance instruments and approaches that have a greater impact.

Equally problematically, these cities may have locked themselves into suboptimal governance alternatives that are outside their control and were developed in (slightly) rosier times. Examples are LEED and PACE, governance alternatives on which all three cities are highly dependent. LEED has long been criticized for not (always) delivering in practice what it promises in theory (Van der Heijden, 2015): there is a history of evidence that LEED
certified buildings are not (always) more energy efficient than conventional buildings. While LEED has, arguably, challenged some people to develop flagship examples of energy efficient buildings, the overall conclusion is that the energy efficiency gains of buildings with low levels of LEED certification are questionable, and the energy efficiency gains of buildings with higher levels of LEED certification should not be taken for granted (for a systematic review of the literature that evaluates LEED performance, see Amiri, Ottelin, & Sorvari, 2019). In a nutshell, LEED may not be ‘tough enough’ if cities are serious about achieving ambitious energy consumption and emission reduction targets (Barth, 2018).

Likewise, PACE presents cities with challenges. In particular, the global financial crisis dealt the instrument a serious blow in 2010 when major financiers began to refuse to back mortgages with PACE liens on them (int.02). Equally worryingly, evidence has begun to emerge that residential property owners often do not understand the conditions of PACE financing, and sometimes face aggressive sales practices. Effectively, tradespeople such as plumbers and repairmen can function as loan brokers (earning referral fees from lenders), but they often lack training and oversight. They have a major incentive to ‘sell’ PACE financing, because of the referral fee and the money that becomes available to their (prospective) clients to carry out the construction work (Grind, 2017). Individual cities have limited power, however, to address this kind of problem with the external governance alternatives that they support and on which they depend.

**Discussion**

The above has sought to unpack and better understand the reasons why ‘frontrunner cities’ such as Chicago, New York, and San Francisco are struggling to achieve their ambitious climate action targets by embracing a set of governance alternatives. For these three cities, the study has uncovered what appears to be a tension between, on the one hand, the strategic aspects of the cities’ ambitious climate strategies at the policy level and, on the other hand, the substantive and procedural aspects at the administrative level (see related observations in Candel & Biesbroek, 2016; Cejudo & Michel, 2017). At the political level, the three cities have all achieved substantial coherence about the need to address climate change. The cities’ climate change strategies are not only ambitious in terms of the reductions in carbon emissions and other waste that they mention, but also spell out an explicit desire to achieve such reductions throughout the city (from the ways in which people commute and take recreation to the ways in which they live and work in the city), and they link environmental ambitions with social and economic ones – to speak with the introduction to the special issue: at the systemic level the ‘right’ institutional characteristics are in place for effective policy integration (Domorenok et al., 2021).

At the content level, it appears that not all the pieces of the puzzle to implement the vision laid out in the strategies have been developed. Under pressure from their ambitious strategies, the cities have embraced a set of governance alternatives through a scattergun approach of supporting externally developed existing alternatives (such as LEED), using off-the-shelf alternatives (such as PACE), and embracing opportunities for developing alternatives when they present themselves (such as the Chicago Green Office Challenge). Whilst this allowed the cities to ‘hit the ground running’, the configuration of the traditional governance interventions available combined with the governance alternatives that have been embraced still appears too limited to operationalize their
ambitious climate change strategies. It also shows undesirable gaps and redundancies. This reflects a lack of coordination among the governance alternatives, as well as a lack of coordination between the ‘new’ governance alternatives and the ‘old’ traditional governance interventions for urban climate action.

At the organizational and implementation levels, it appears that the cities lack the capacity to use the (available) pieces of the puzzle well. The interviewees indicated that with the growth of governance alternatives it becomes more urgent to give careful consideration to, for example, the way they align with the needs of different groups (climate mitigation leaders and laggards and the groups in between) and what is expected as a result of the governance alternatives (the use of easy and moderate and more substantial technical solutions and behavioural change). If there is a mismatch between the needs of the groups and their willingness and ability to change, then the governance alternatives will undermine the ability of the city to achieve its ambitious climate targets. Likewise, the interviewees explained that relationships and interdependencies between governance interventions (both the traditional and the alternative ones) can make or break the configuration of the governance interventions in place. However, it is likely that such positive and reinforcing feedback asks for careful design, and without careful consideration and design negative relationships and interdependencies may arise (cf., Meadows, 2008). This observation is critical as it indicates a feedback between institutional capacity at the organizational and individual levels (Domorenok et al., 2021): arguably, lacking organizational capacity, the substantial knowledge, competencies, and skills of individuals that the cities have access to are of little help to meet the targets they have set themselves.

Challenges at the organization and implementation levels call for increased coordination capacity (knowledgeable and experienced staff and other resources) and dedicated coordination structures and procedures (Howlett & Saguin, 2018; Lodge & Wedrich, 2014), and yet the interview accounts highlight that this is exactly where the three cities struggle. City government staff reportedly lack the skills and experience to develop holistic urban climate governance interventions – those that cross traditional areas of urban policy and planning – and to work with the non-traditional actors involved in the governance alternatives they are embracing – citizens, businesses, and NGOs, which often have interests in pursuing urban climate action that are (slightly) different from those of (city) governments. This is a critical insight (albeit not a novel one): policymakers, practitioners, and academics should be careful with sharing narratives of climate change policy success if this is little more than success ‘on paper’. For over 20 years, cities like Chicago, New York, and San Francisco have been lauded as climate action frontrunners and examples for others to follow because of their ambitious climate strategies and their active engagement with governance alternatives. However, it is only now that we are beginning to see how this (in hindsight, perhaps, all too) eager embrace of governance alternatives has locked these cities into less-than-optimal configurations of traditional interventions and governance alternatives.

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6Within the study presented, the retrofitting of existing non-commercial property was repeatedly mentioned as a key challenge not effectively addressed by either traditional governance interventions or by the alternatives.

7Within the study presented, the interviewees repeatedly questioned whether the ongoing development of certification instruments for new commercial property was necessary, considering the certification instruments that were already available.
Conclusion

Having explored the tensions between the strategic aspects of the ambitious climate strategies of three major cities in the United States at the policy level and the substantive and procedural aspects at the administrative level, I round up this article with a look over the horizon of these cities. To what extent might cities elsewhere (beyond frontrunners, and beyond cities in the United States) face and fall into the ‘opportunity trap’ that I have described here (the eager embracing of readily available governance alternatives)? Of course, in doing so, a warning is in place: the generalizations that follow are theoretical rather than empirical (they focus on the broad patterns that cities elsewhere may experience, rather than the empirical details and differences across cities).

The long answer short is that this opportunity trap in this article has long been forewarned in the broader public governance literature. It has been pointed that too easily the political and administrative dimensions of public governance capacity are conflated – the presence of the former does not imply the presence of the latter (Trein, Meyer, & Maggetti, 2019). It has been pointed out that too easily it is assumed that integrated policy mixes will result when political commitment, administrative capacity, and governance alternatives are all present (Rayner & Howlett, 2009). It has been pointed out that without a lack of coordination across institutional levels a governance solution chosen (i.e. a mix of governance alternatives) becomes a governance problem in itself (i.e. being locked-in to a suboptimal mix; cf. Simons & Voss, 2017). These dynamics have all played out in the three cities that on paper show much promise (ambitious climate action strategies, political will, and so on – a high level of systemic institutional capacity).

In the decades ahead, the governance alternatives discussed in this article are unlikely to disappear. Rather, they may become even more popular in the light of austerity politics (doing more with less), the ever-greater need for policymakers to leave their mark in their current term (populist policies), and the growing reliance on citizens, businesses, and NGOs in public policy (joined-up governance, co-regulation, etc.). The broader narrative about these governance alternatives (partly driven by frontrunner cities) remains to be that are a promising means for cities (and others) to quickly respond to (the risks of) climate chance (Van der Heijden, 2018). That makes these alternatives particularly attractive to cities with less systemic and individual institutional capacity than the frontrunner cities discussed here. It is then likely such cities will embrace these alternatives as hasty and uncoordinated elsewhere as we have witnessed here. Thus, paradoxically, non-frontrunners may be even more prone to the opportunity trap than frontrunners.

In sum, it remains important for scholars and policymakers to stay vigilant and to keep asking what a particular alternative (and sometimes novel, cheap, readily available, and popular) governance instrument or approach means for the performance of the larger configuration over a multi-decade timeframe, and how we can make sure that it makes the whole larger (rather than smaller) than the sum of its parts. To that end, it is, to speak with the introduction to this special issue (Domorenok et al., 2021), essential to consider all levels of institutional capacity when studying (or embracing) these governance alternatives, rather than be blinded by how well they work at (or fit) an individual level.
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