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CONTENTS

EXECUTIVE SUMMARY

At the 21st Conference of the Parties (COP21) in Paris in late 2015 cities took their place as leaders in responding to the threat of climate change. C40 cities, having already taken more than 10,000 climate actions, demonstrated their leadership in reducing carbon emissions and adapting to climate change, by setting ambitious goals through their commitments to the Compact of Mayors[1].

In order to achieve the aims of the Paris Agreement and limit warming to 1.5 degrees Celsius, swift and comprehensive action must be taken by a range of state and non-state actors, including cities. In this report C40 city leaders ask their partners and collaborators, locally and internationally, to join them in taking robust climate action in the crucial years before 2020 by which emissions must peak. This report is a call to all those who work with or in cities on tackling climate change to engage with city governments and accelerate climate action by:

• Establishing a new paradigm of government collaboration

• Enabling cities to lead from the front

• Resetting the climate narrative

• Unlocking the power of citizens

• Building collaboration between the private sector and cities

• Improving the flow of finance to cities

This report describes the barriers and challenges city governments often face when taking climate action. It provides the basis for developing a shared understanding that can allow city leaders and key collaborators to work together to overcome these challenges.

C40's 2015 report *Potential for Climate Action* identified over 26,000 additional climate actions that cities have not yet taken due to a range of barriers – from a lack of resources to poorly designed legislation[2]. By leveraging C40's unique network of more than 80 global cities, this report presents the candid perspective of city practitioners on the key challenges that limit climate action. It provides a window into the reality of implementing climate action in cities.

In *Potential for Climate Action* C40 showed how over 75% of the challenges cities face cannot be managed unilaterally[3]. *Powering Climate Action* demonstrated that cities rely on a collaborative approach to governance for the majority of the transformative actions they take, showing that cities are often already very effective at partnering and collaborating[4]. Collaboration with partners in other sectors is therefore vital. Cities recognise that they can continue to become even better partners – to nations, to the private sector, and to other cities – by working together to overcome common challenges.

This report aims to provide the much-needed insight and impetus to allow cities and their partners to form a common understanding and work together to accelerate and expand local climate action.
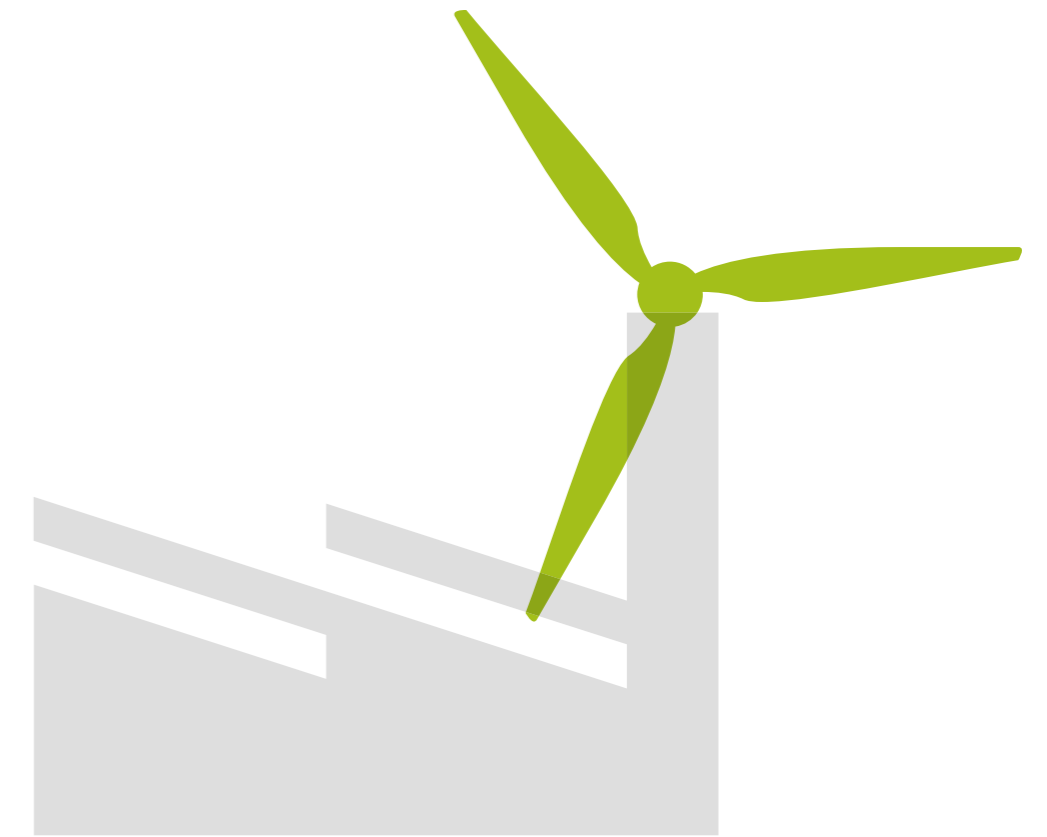
TRANSFORM

INTRODUCTION

Unlocking Climate Action in Megacities: The City Practitioners' View presents the barriers to climate action and identifies issues for discussion that can contribute to unlocking city governments' potential to address climate change.

By combining a comprehensive, evidence-based framework for understanding barriers to climate action with interviews with city practitioners, the project team has identified six main themes for discussion: vertical and horizontal coordination; better internal city operations and capacity; winning support for climate action; understanding and engaging stakeholders; collaborating with the private sector and finance for climate action.

BACKGROUND

City governments are essential to effectively deal with the threat of climate change. The world moves forward from the 21st UN Conference of the Parties (COP 21) with an ambitious, global target to limit warming to 1.5 degrees Celsius and a sober awareness that many areas are already being affected by climate change. It is clear that we must act quickly to unlock the vast potential for climate action within cities. Based on current trends of consumption and infrastructure development, *The Decisions We Make Today Will Shape Tomorrow* shows that within five years we will have "locked-in" sufficient emissions to exceed the globally safe carbon budget. A third of these emissions will be determined by cities, making them pivotal actors in determining whether the world gets on a low-carbon pathway[5].

City governments have recognized this and are leading the way. C40's flagship research publication *Climate Action in Megacities 3.0* (CAM 3.0) highlighted the 10,000 climate actions already underway in C40 cities, potentially saving up to 645 $MtCO_2$ by 2020 and reducing the risks from climate change. In 2015 almost half of the actions taken in C40 cities were at a city-wide scale, an increase of 260% since COP 15 in Copenhagen in 2009[6].

Cities are now delivering unprecedented and globally impactful action on climate change. There is more to be done, however. *Potential for Climate Action*, a report launched at COP 21 in Paris in December 2015, showed that:

1. There is potential to expand C40 cities' climate action by more than 26,000 specific activities, programmes, procurements and policies. Of these, C40 has identified 2,300 high-impact, readily deliverable actions that could save a massive 450 $MtCO_2$ by 2020, equivalent to the annual emissions of the United Kingdom, and could be unlocked with just $6.8bn.

2. This potential is limited by a range of challenges. Most significantly: resources and funding; political and leadership; and institutional, regulatory and legislative challenges.

3. Three quarters of challenges cannot be overcome unilaterally by cities, but require support from partners, such as national governments or the private sector[7].

Despite these challenges, the research shows that city governments are so confident that their climate actions are both effective and worthwhile that they plan to expand four out of five of them. City leaders are also committing publically and voluntarily to ambitious targets through transparent initiatives like the pioneering Compact of Mayors[8].

5 The Decisions We Make Today Will Shape Tomorrow. C40, 2015
6 Climate Action in Megacities 3.0, C40 and Arup, 2015
7 Potential for Climate Action: Cities are Just Getting Started. C40 and Arup, 2015.
8 http://www.compactofmayors.org/

RESEARCH AIMS

This report seeks to deepen understanding of the challenges faced by city governments in achieving their climate ambitions. We learn from city practitioners themselves what are key barriers to climate action, with the aim of providing a shared understanding that can form the basis of an international, collective response.

Unlocking Climate Action in Megacities – A City Practitioner Perspective is based exclusively on extensive surveys of and detailed interviews with staff from C40 cities and C40 itself. Collectively they hold years of experience working in cities to progress substantial climate action.

This report lays the groundwork for discussion amongst city governments and with key stakeholders in city climate action. It acts as a briefing paper to inform future efforts to accelerate city climate activity by:

1. **Presenting the practitioner perspective on the leading challenges to urban climate action, covering all global regions and all urban sectors –** providing clarity and context on the challenges faced by our cities.

2. **Providing a common understanding to allow collaboration amongst those who work with or in cities on climate action.** Drawing on the successes and frustrations of city leaders in trying to address these barriers to climate action, the report acts as a convening tool and conversation starter, intended to catalyse collaboration, research, programs, and policies.

PROJECT PROCESS

This report is the culmination of over a year of research into the challenges that are faced by city governments when taking climate action.

It builds on *Potential for Climate Action*[9], which was written in partnership with Arup and University College London. From our on-the-ground experience working with city practitioners, C40 knew that the challenges city governments face in progressing climate action are often very complex and highly project or situation specific. *Potential for Climate Action* was instrumental in developing and structuring our understanding of city government climate action challenges. However, the need remained to explore how these challenges prevent action in specific circumstances, and how best to address them.

Therefore, C40 conducted in-depth, semi-structured interviews with city and C40 staff to explore each of the leading challenges to action. This approach allowed us to identify the key themes that characterise how cities experience the most critical challenges and frame discussions on what can be done to address them.

9 Potential for Climate Action: Cities are Just Getting Started. C40 and Arup, 2015.

7

POSSIBLE

CHALLENGES TO URBAN CLIMATE ACTION

This report identified six challenge themes to describe how city practitioners experience the most significant obstacles to climate action in C40 cities. The themes categorise the specific challenges that interviewees identified in terms that are clear and meaningful, and offer insight into how they might be managed. The following summarises the leading themes:

1. **Vertical and horizontal coordination –** This theme concerns the relationship between a city authority and other government actors who impact city government operation, duties and freedoms. It explores the interaction between different levels of government – international, national and sub-national.

2. **Better internal city operations and capacity –** This theme relates to governance within the city authority, and how the city government implements its roles and responsibilities. Typically, these challenges are under the direct influence of the city leadership, and relate to structure, culture, priorities, planning, decision-making and financial practice.

3. **Presenting the case for climate action –** This theme is about the challenges that cities face in collecting, accessing, analysing and presenting information about the benefits of climate action beyond simply reducing emissions or risks from climate change. These include understanding and demonstrating financial benefits as well as contributions to improved health, equity, and economic development.

4. **Understanding and engaging urban stakeholders –** This theme explores how city staff, even where they have strong evidence of the benefits of climate action, may still struggle to effectively engage with and collaborate with key stakeholders, especially the community at large.

5. **Collaborating with the private sector –** This theme highlights the importance and difficulty of collaboration between city government and the private sector. Private sector organisations are often the main delivery partner for climate action, but cities can face a range of challenges establishing an effective working relationship with the private sector and encouraging green business.

6. **Finance for climate action –** This theme focuses on the challenges city governments can face in accessing funding to take climate action forward, potentially because the city government struggles to demonstrate the financial case for a climate action or to have the financial autonomy to employ appropriate fund-raising mechanisms.

The findings of the interviews and surveys have shown that city governments face two main types of challenges:

- **Systemic governance challenges,** which occur through the whole delivery cycle and are either linked to or directly cause the second type of challenges;

- **Sequential challenges** which occur at distinct stages of the action delivery cycle.

Systemic governance challenges relate to vertical and horizontal coordination and internal city government operations and capacity. Because systemic governance challenges occur throughout the project or policy delivery process they are shown at the centre of Figure 1.

National, and sometimes regional, government sets the framework within which city authorities govern – the geographical boundary, power structure and legislative remit of a city authority. Coordination with national, regional and neighbouring government was identified by city practitioners as a root cause of many other challenges they face, especially within their own governance structure.

It should be noted that this is a general principle, and does not mean to imply that in every instance difficulty implementing climate action is a direct result of challenges with national, regional and neighbouring government.

Sequential challenges (challenges three to six) are shown in Figure 1 as a flow of actions that loosely correlate with an ongoing cycle of delivering action. Using this action delivery cycle, the challenge themes can be placed sequentially in the likely order in which a city practitioner may encounter them when delivering an action. Note however that these challenges may well occur in multiple places from time to time.

Importantly, Figure 1 shows that while progress can be made by removing specific challenges – accessing capital, for instance – smooth action implementation requires consideration of all potential challenges.

Figure 1. Leading challenges to urban climate action

In the following chapters each of the six challenge themes are explored in more detail, with references to specific city experiences. Within each of the general challenge themes, specific challenges have been identified and the most relevant highlighted within the following chapters. Further insight into how to address these challenges is then provided through examples of how city governments, their partners, and C40 have responded. Finally, points for discussion are presented as a conversation starter for city governments and their stakeholders to consider the best approaches to removing these key barriers to accelerating action.

INTEGRATE

VERTICAL AND HORIZONTAL COORDINATION

City governments are part of international, national and sub-national systems of government, which set the context for and define the conditions of city climate action. Vertical and horizontal coordination (see box 1) are therefore essential, but remain challenging. *"The key barrier to climate action encountered in Nairobi City is independent and discordant actions by individual institutions. This barrier is important because Nairobi City would make great achievements if there was synergy from the key stakeholders."* – Nairobi representative.

"The biggest barrier is that we are not aligned... we can't achieve our goals without aligned policy at state and city level." – Melbourne representative

The aspiration of the Paris Agreement to limit global temperature rise to 1.5 degrees means we now have the political consensus and momentum to prevent catastrophic climate change but we must move extremely fast in order to make the aims of the Agreement achievable. Cities must help nations deliver on their commitments made in Paris. Collaboration will be key to this.

VERTICAL AND HORIZONTAL COORDINATION

Vertical coordination has clearly defined power hierarchy. Higher levels of government set legislation, policy, or funding allocations, which will affect how policy and programmes, can be implemented at a lower level. For example, national government often determines the allocation of funding to city government. Vertical coordination requires governance, financial and information systems to be aligned to ensure different levels of government – local, regional / sub-national, national, international – have coherent and consistent approaches to particular policy issues.

Horizontal coordination is characterised by a lack of power dynamic between different entities at the same level of government, i.e. between local administrations in the same region, especially where the delivery of services or presence of risks extends across both jurisdictions. Within this report horizontal coordination refers explicitly to interactions between governments – such as one local authority and another. It does not cover interactions within one city government. Interactions between departments of city government are covered in the following chapter on internal city operations.

Collaboration greatly increases the chances of smooth and successful local implementation, as it allows city representatives to influence policy and understand the context for their decision-making. Collaboration also provides benefits for national and regional governments as there is increased likelihood their policies will be supported by complementary measures at the local level.

However, many C40 regional staff agreed that vertical coordination is a problem: *"The willingness of nation-states to coordinate with cities is critical, but often they rely more on groups of experts than on city representatives. Some nation-states have cities in the groups they consult, but others don't."* This can leave cities unable to influence those national policies that affect them, and can limit the range of responses they can implement due to the context that has been set by the national or regional government.

Many aspects of city government policy, programmes and service delivery need to be planned beyond city borders, including energy provision, water supply and treatment, transport services, and emergency response. As a result, horizontal coordination can create significant challenges. An Amman representative spoke about this: *"Amman is part of a wider metropolitan region. There has to be consistency between policies and projects, but Amman has no legal influence on other municipalities. We need a regional entity."*

IMPOSSIBLE

Mechanisms for consultation between city and national or regional governments exist in many countries and regions. However, city practitioners and C40 staff reported that **a lack of a shared goal, vision or priorities between government bodies** prevents effective coordination. Without shared priorities and vision policy integration is hard to achieve. C40 regional staff identified that *"a clear goal will facilitate integration- without this, efforts to work together just make things more confusing. Clarity of purpose is key for coordination"*.

Even if city government and other government partners have a strong shared vision and goals they can face significant challenges in taking climate action if **governance structures are not set up to effectively support their planning or delivery**. This can be caused by a misalignment between the problem scale and the allocation of responsibility to resolve the problem. For example, in Milan the city administration would like to implement building retrofits to improve energy efficiency. The city administration is well placed to work with the stakeholders involved; however, they are not able to set legislation that could increase the uptake of retrofits.

During city and staff interviews there were multiple references to the need for improved governance structures to facilitate metro- and regional (sub-national) level coordination- that is, improved horizontal coordination. Many city governments constitute only part of the whole metropolitan area. For example, both Melbourne and Sydney Cities account for only a small part of the metropolitan area, which is managed by multiple councils. Even where visions align, achieving coherent policies across administrative boundaries can be difficult and affect effective delivery of climate action such as public transport or cycling infrastructure.

CHALLENGE EXAMPLE:
AMMAN'S BRT IMPLEMENTATION

Over the course of the last 2 years the population of Amman has increased dramatically -by approximately 1 million, to a total of 4 million people- largely due to migration from areas of conflict. In total 5 million people interact with the city on a daily basis. Growth and large commuter numbers mean that mobility is a challenge for Amman. *"I can't emphasise enough how critical it is for the city. It is the one thing that people complain about on daily basis – it used to be street cleanliness and traffic, now it is only traffic,"* said an Amman representative. It is also a huge opportunity; *"improving the transportation of the city can have a huge impact on a range of areas – economic, social, environment and climate."* A central part of Amman's transportation improvement plans is the installation of a Bus Rapid Transport (BRT) system. The first stages of this are now underway and progressing well, but getting to this point involved overcoming a number of barriers. "*Our ability to attract such financing can be very difficult if the [national] government can take decision at any time to compromise our financial position."*

Chief among the barriers encountered was overcoming issues coordinating with the national government on budget allocations, which created difficulties in securing funding and disrupted the course of the project.

This can be demonstrated with two examples. A large part of Amman City's income is sourced from fuel tax and traffic fines. However, the national government collects fuel tax and then distributes it to the city government. The amount distributed to Amman is both smaller than might be expected given the population of the city (and number of cars) and is unreliable, changing from year to year due to shifting priorities at the national government level. Similarly, the national government has acted in the past to declare a moratorium on traffic fines for a year. This resulted in a $30 million gap in the city government's budget.

Budget fluctuations like this make it difficult for Amman City to secure funding from international agencies or the private sector.

In the instance of the BRT development, in 2010 Amman was able to secure a long-term loan from the French Development Agency (AfD) for the infrastructure elements of the project. The agreement was made between the AfD and Amman. However, before the project could get underway, the national government made a decision to suspend municipal projects, raising concerns about the management of the finances. The BRT was delayed for nearly 2.5 years. *"That created a lot of problems for financing, we had to go back and negotiate new financing terms…, and they asked for more guarantees from government."*

CITY AND PARTNER SUCCESS STORIES

European Union Committee of the Regions

The Committee of the Regions (CoR) is the voice of regions and cities in the European Union (EU). It consists of 350 members – regionally and locally elected representatives from the 28 EU countries. Through the CoR, EU local and regional authorities can have a say on the development of EU laws that impact regions and cities.

The mission statement of the CoR is to work closely together with the European Commission, the European Parliament and the Council of the European Union, and in the Member States with the various tiers of authority, in order to promote multilevel governance. The CoR votes on political recommendations for European strategies and participates in the preparation of legislation. The CoR also feeds

into European decision making, the experience and expertise of the regional and local authorities, who are most often responsible for implementing legislation.

In addition, the CoR establishes platforms and networks, and organises forums to facilitate cooperation and the pooling of experience between regions, cities and municipalities, and develop partnerships with their representative organisations.

Transbay Joint Powers Authority

In San Francisco the Transbay Joint Powers Authority (TPJA) was established to design, build and operate a massive $4.5 billion multi-modal transit terminal including extension of rail lines serving the greater San Francisco area. This group brings together representatives from city government, state agencies, and regional organisations. The TPJA has successfully established a temporary terminal to serve commuters while it manages the comprehensive programme to establish the new multi-modal terminal.

Santiago Regional Administration

In Santiago the regional administration facilitates agreement between neighbouring municipalities so that they can undertake common projects. The funding for the projects comes from the national government, and the regional administration coordinates

the distribution of funding and negotiates agreement for everyone to go ahead with the projects. In the case of Santiago this facilitation role is critical, particularly when combined with the incentive of distributing funding. If one municipality was trying to play this role, the other municipalities might not be interested.

Melbourne City engagement with State Government

The City of Melbourne takes a flexible and close approach to working with state government agencies. *"We are reliant on them, so we are constantly connecting and engaging, and focusing on where their interest is. The last [state] government was not so focused on energy efficiency and renewables but they were focused on adaptation, so we focused on working with them on that. By understanding their policy priorities we were successful in winning funding."*

As a result of their close collaboration and ability to frame projects and policies in ways that resonate with the State Government Melbourne City was able to successfully lobby for changes to state legislation that have allowed environmental upgrade agreements to be put in place. Since then they have monitored the success of these agreements, which allowed them to be further expanded under the next state government. *"It is about selling the mechanism in a way that is aligned to state policy. When going to another level of government you need to have strong arguments. It sometimes takes resources to do research and prove the business case."*

Wuhan – Low Carbon Pilot city

"During the year 2012 the central government designated Wuhan as a Low Carbon Pilot city. Because of this city of Wuhan made up a series of plans and policies to implement this initiative and improve the whole city," said a Wuhan representative. Wuhan, together with a number of cities across China, is piloting low carbon development. In this way the city is very involved in testing national policy and engaged in ongoing development.

C40'S APPROACH

Compact of Mayors

The Compact of Mayors was launched by UN Secretary-General Ban Ki-moon and his Special Envoy for Cities and Climate Change, Michael R. Bloomberg, under the leadership of the world's global city networks – C40 Cities Climate Leadership Group (C40), ICLEI – Local Governments for Sustainability (ICLEI) and the United Cities and Local Governments (UCLG) – with support from United Nations Human Settlements Programme (UN-Habitat), the UN's lead agency on urban issues. The Compact establishes a common platform to capture the impact of cities' collective actions through standardized measurement of emissions and climate risk, and consistent, public reporting of their efforts.

By aggregating city commitments and measuring progress the Compact allows cities to:

- Increase their visibility as leaders responding to climate change;

- Demonstrate their commitment to an ambitious global climate solution, particularly as nations convened around a new climate agreement in Paris in December 2015.

Ultimately, the Compact of Mayors provides hard evidence that cities are true climate leaders, and that local action can have a significant global impact. It allows cities to demonstrate their collective impact, and thereby provides them with a platform to engage effectively with national government and international negotiations. The Compact has successfully raised city government profile as a critical element of a global response to climate change. This paves the way for greater city engagement in policy design and implementation in support of the Paris Agreement as well as a higher profile with funders looking to invest in climate action.

Coalition for Urban Transition partnership with NCE

C40 has established a long term partnership, the Coalition for Urban Transition, with the New Climate Economy (NCE), aimed specifically at enhancing the collaboration and coordination between national and city government. This will help build on the evidence presented here and establish more precisely the direction for collaboration, coordination and integration between levels of government.

ESTABLISHING A NEW PARADIGM FOR GOVERNMENT COLLABORATION

The need for effective integration of city, regional and national government is an area that has received considerable attention over recent decades. That these challenges persist is a testimony to the complexity and difficulty in overcoming them.

This report aims to highlight options for further discussion based on the views of city practitioners. However, identifying how, where and when to implement these options is the most significant challenge, and will require ongoing collaborative effort from city government and their key partners.

The view from city practitioners is that mechanisms must be identified to encourage the following outcomes:

1. Define effective vertical and horizontal integration:

City governments are seeking support to characterise best practice for effective horizontal and vertical integration. Efforts to define effective integration could involve engaging with other city governments, academics, and other levels of government. Further steps include identifying:

a. *Where effective governance solutions have been implemented that allow vertical and horizontal coordination to occur.* This may require exploration of historical precedents for substantial governance restructures, which could inform effective approaches and motivations for change. City leaders are interested in understanding characteristics that create productive collaborations between different levels of government and can ensure the allocation of responsibility and sharing of power are fit for purpose, and appropriately resourced. Ensuring appropriate allocation of responsibility could include providing cities with the freedom to innovate in finance and procurement. Responding to the climate challenge demands new technologies, policies and approaches. To deliver these cities must be able to innovate in seeking out resources, and implementing new solutions. City governments may benefit from being empowered to: set their own tax regime and spend that revenue freely; set up funds such as public benefit funds to issue bonds; enter into financial arrangement with the private sector organisations; and procure services and solutions based on fitness for purpose as well as cost.

b. *How international, national and other levels of government want to engage with cities in setting the vision and goals for urban-relevant strategy.* City governments are seeking better engagement in the development of policies that impact on or are impacted by cities. The mechanisms and forums that facilitate this must meet the needs of both city and other levels of government.

2. Show the benefits of more effective integration:

City governments want to establish an evidence base around the mutual benefits of improved collaboration.

3. Catalyse better vertical and horizontal integration:

Initiate discussions with empowered stakeholders from national, regional and city government, academia, and other informed sectors, to catalyse changes in governance that allow for improved collaboration. Responses could include:

a. Supporting city and other government representatives to develop or access skills, resources, information and expertise to collaborate more effectively with other government bodies.

b. Nurturing, rewarding and sharing examples of innovation in governance.

c. Continuing to develop existing organisations that aggregate the city government voice nationally and internationally and facilitate city government contribution to policy making at those scales. Building on the success of the Paris Agreement and Compact of Mayors, city governments have demonstrated they can influence national policy by joining forces. There remains room for significant expansion in engagement to demonstrate the scale of potential impact and benefits of improved integration – organisations like C40 and NCE could help facilitate this engagement. There is also a need to explore how to maximise the benefit of forming city coalitions at national, or regional levels.

GOVERN

THEME 2
## BETTER INTERNAL CITY OPERATION AND CAPACITY

The ability for city government to run its operations smoothly and in a coordinated manner is critical to the effective delivery of climate change action. City and staff interviews revealed that many practitioners experienced specific challenges in achieving coordination across city departments. This is a particular challenge for climate action, as the programmes are often cross-departmental in nature and regularly require cooperation from a variety of government agencies. In addition, in interview discussions staff revealed that strong leadership and sufficient capacity within government is required to keep the momentum behind climate action.

For Barcelona **coordination across departments is one of their most critical barriers**. *"The top challenge is governance, working across multiple departments... We started work on health issues related to climate change. It took a lot of time to find the right people working in health. But it is also an opportunity as you get to work with a lot of other people, to have other perspectives, and learn a lot."* Barcelona City representatives

Figure 2 demonstrates the number of different lead authorities that can hold primary responsibility over one or more of a city government's strategic assets – housing, roads, or borrowing,

for example. On average there are 17 different authorities. While this is not necessarily direct evidence of a barrier, it points to a high level of complexity, which certainly supports the testimony of city staff that coordination across departments is a challenge.

Figure 2. Number of authorities per city government with control over one or more strategic asset.
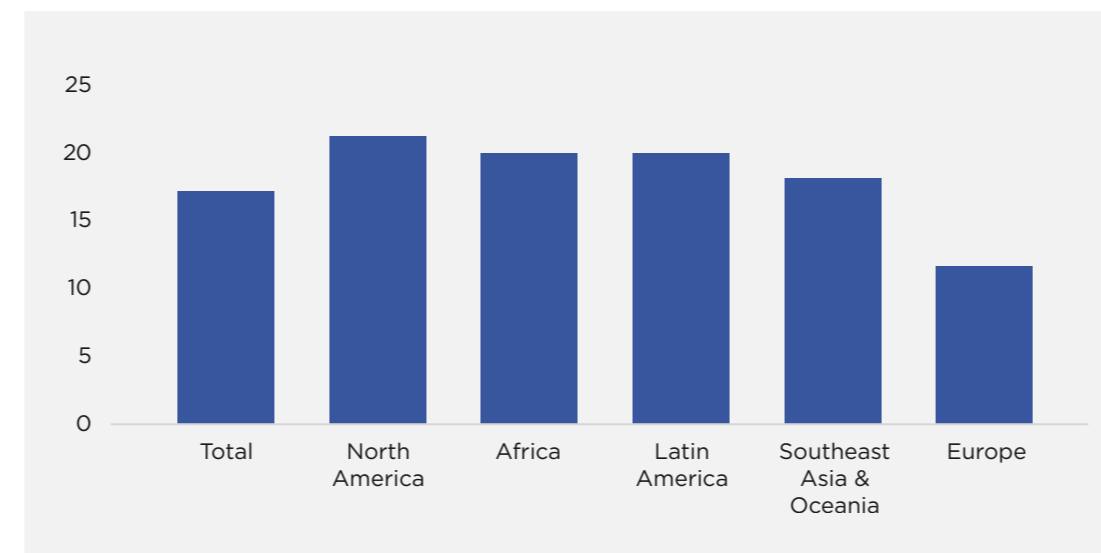
City and C40 staff have reported that there is a **shortage of skills, knowledge and resources** required to plan for and implement climate action within the city government, especially in the Global South. *"There is not enough time or appetite to bring in the innovations that will allow us to develop our projects in a much more climate responsive manner."* – Johannesburg representative

City governments need specific capacity to deal with risk and uncertainty. City staff need to be able to understand how actions can interact with other city actions and how they will evolve in the future, requiring skills in forecasting and scenario planning. If cities lack the capacity to process risk and uncertainty in the medium and long-term then this makes effective climate action harder. Barcelona reported that without strong capacity to understand risk and uncertainty the city has a decision-making bias to known solutions with short-term benefits.

Strong, visible leadership and consistent policy on climate change are essential in carrying out successful climate action. Lack of leadership and policy consistency prevents effective climate action through several mechanisms, for example, by preventing long-term planning to strategically prepare a city for climate change. Long-term planning is particularly critical for adaptation, which requires consideration of the distant future and response now. When policy positions keep changing effective adaptation planning suffers.

City and C40 staff also reported that a **lack of transparency in decision making and planning can hinder effective action by the city authority and impact on partner relationships.** They noted that effective operation of the city authority depends on relevant stakeholders having access to accurate, timely and relevant information on priorities, funding and roles.

City governments that demonstrate they are reliable and consistent in the implementation of policy and legislation often make the most successful partners. City and C40 staff discussed that if city partners are not confident that a city government policy or programme will be adhered to, they are unlikely to show interest in collaboration or investment. Confidence and trust are fundamental conditions for effective collaboration, particularly if a private organisation is required to invest or accept financial risk.

CHALLENGE EXAMPLE:
BARCELONA'S RESILIENCE BOARDS

In 2003 Barcelona face extremely serious water shortages. Water had to be shipped in and any non-essential uses were prohibited. *"If you don't have water for 4 million people then you have a very big problem."*

In response to this crisis the city government quickly mobilised and was able to work in a coordinated fashion to deliver solutions. Barcelona's challenge was to transform this crisis management model into one that could address long-term impacts and manage projects to improve resilience.

Identifying, designing and implementing appropriate climate change adaptation actions within Barcelona city required coordination with many parts of the city. Government response to climate change must be coordinated *"work is very cross cutting: in municipalities it is very difficult to work with other departments and areas; sometimes it is very difficult to find the right person to talk about specific subjects".*

Not only was it difficult to find the right people, but in order to work together well relationships need to be developed so that there can be professional trust as well as understanding about the work circumstances that different organisations face.

Initially Barcelona City also lacked formal systems and structures that could allow different organisations to work together effectively, focusing on action.

To address these issues a dedicated department within Barcelona City was created. Tasked with implementing resilience oriented measures and projects, this group is responsible for engaging with the other departments and stakeholders within the city to coordinate, amongst other things adaptation work. This group developed processes to allow city departments and external stakeholders to work together. *"We created the resilience boards to try and solve specific problems; once resolved the project is closed and we create another focused on another problem. This is a good way to work, we have been doing it for the last 2 or 3 years."*

As a result of the systems and processes established to build resilience and progressively reduce the city's vulnerabilities, Barcelona city is seeing innovation across its whole city government. *"This is a great opportunity to change the culture of how the municipality works; adaptation is also an excuse to work in a different, more efficient way."*

CITY AND PARTNER SUCCESS STORIES

Cape Town climate working groups

Cape Town has a structured transversal working group attended by representatives from relevant departments to facilitate collaboration on energy and climate projects at the administrative level – this feeds into a dedicated council committee on energy and climate change. The Council has committed to energy and carbon targets – these are supported by energy and climate action plans onto which all relevant departments are required to place their relevant programmes and projects. To the extent possible, the actions are monitored via the formal City system; in addition there are monitoring, reporting and review systems in place to keep the action plans up to date and relevant.

C40'S APPROACH

C40 networks

C40 networks facilitate dialogue amongst city officials. This builds trusted relationships, which in turn ensure that ideas, solutions, lessons, questions, and even friendly competition can flow freely and responsively to cities' needs. Rather than end at a case study or report, C40 networks create conversations that enable cities to tailor their own actions to their unique situations, and band together to use their collective power to access partnership resources, including technical and financial support. The result is that cities' climate actions to reduce GHGs and climate risks are bolder, more impactful, implemented faster, at a lower cost and with less resources than if they were to go it alone. No other organisation facilitates such deep connections amongst city staff across more than 50 countries, 20 time zones and 26 languages to accelerate local action with major global impact.

Technical support for mitigation planning

British philanthropy Children's Investment Fund Foundation (CIFF) will provide $5.3 million to help a minimum of 30 C40 cities in the Global South to conduct accurate inventories of their greenhouse gas emissions, set targets and develop action plans. The aim of the investment is to create a critical mass of cities across the world quantifying their urban emissions and setting robust reduction targets using an international gold standard – the Global Protocol for Community Scale Greenhouse Gas Emissions Inventories (GPC).

This technical support will lead to the development of clear and robust climate action plans. These plans can provide a strategic framework to enhance the ability of staff within city government to coordinate their actions to address climate change. It also provides a clear signal to city government stakeholders about what the city aims to achieve in climate action and how, when and by whom action will be taken.

ENABLING CITIES TO LEAD FROM THE FRONT

As with Theme 1: vertical and horizontal coordination, challenges around capacity and governance have persisted for decades in some cases, showing how difficult they can be to overcome. However, improved internal city governance can allow city governments and their partners to work together to identify the most appropriate next steps to implementing climate action.

Cities are looking for support and collaboration to:

1. Share knowledge and experiences to identify best practice city governance approaches, and how those might be most successfully applied in various situations.

2. Encourage enhanced city governance:

City governments want to establish an evidence base around the mutual benefits of improved collaboration.

a. *Identifying mechanisms to reinforce best-practice governance and raise awareness* about the negative effects of poor governance. This includes identifying the best messengers – potentially private sector organizations – to communicate to city leaders and staff the benefits and potential investment that would arise if improved governance systems were in place.

b. *Facilitating information sharing* between city leaders and officials focused on real world experiences of improving trust and accountability within city government.

c. *Enabling political leadership* to establish and enhance effective governance systems including financial management systems. The international community can help city governments and their leaders by offering support to cities to develop a necessary framework for prioritisation and planning within the city authority itself. This could include systems to manage the day to day allocation of funding and resources; ensuring everyone is paying tax, enhancing internal budgetary control, and developing robust capital investment planning.

d. *Improving capacity for strategic planning*. City staff recognise that long-term planning is important to build trust with stakeholders, and in particular to provide investor confidence and establish markets for innovative solutions and businesses. Plans need to be clear and publically accessible.

VISION

THEME 3
PRESENTING THE CASE FOR CLIMATE ACTION

Making climate change politically compelling is often the first step required to make any headway on climate action. Interviews with C40 and city staff identified that for some cities, particularly in the Global South, **climate action is not a high priority, or it comes second to delivery of basic services and economic development.**

C40 regional staff identified the perceived trade-off between climate action and economic development. *"There is the idea that putting money towards climate change actions means there is less money for jobs, housing, keeping informal settlers or vendors off the street. But one of the key things [the] mayor will always say is how the community livelihood has been uplifted with that [climate] project."* – C40 Regional Staff

"Lack of resources means having to prioritise. Lack of data means it's hard to show benefits of climate change." - C40 Regional Staff

This perception can prevent political engagement on climate action even where climate change is a priority, albeit a lower one than economic development. It sets climate action in opposition to economic development, and can make advocating for climate action highly controversial. City practitioners and C40 staff identified that this belief is held because:

- Climate change mitigation and adaptation action is perceived as inhibiting, or at least competing with economic growth and development.

- Addressing climate change is seen as a long-term issue, whereas many of the challenges in providing basic services are pressing, and residents experience them directly, daily.

- The issue simply hasn't had any coverage and city leaders or broader community are unaware of the dangers of climate change.

Staff from Portland noted that even where citizens are generally supportive of climate action they nonetheless need to be flexible in their messaging. *"When you have competing budget priorities or a crisis of the day, then you still have to make case [for climate action]."* The justifications for climate change action have to shift flexibly to demonstrate the contribution to these new agendas. Venice has experienced this recently with the appointment of a new Mayor and an increase in the priority of economic development. Climate action in Venice is currently being reframed to highlight the contribution to the economy.

Underlying this activity, must be a sound evidence base. Many city staff identified that **accessing, analysing and managing data about climate change** is a fundamental challenge for them. This challenge is experienced in all global regions, but particularly in developing cities. In Lagos they struggle with a lack of data availability. When data is available they are able to make the case for investment. However, in the case of climate change *"lack of data is a big problem... We don't have reliable statistics which are important to track greenhouse gas emissions."* – Lagos representative

C40 city representatives and staff report significant challenges in collecting and analysing data to enable informed decision making. This covers a wide range of data types that include: the impact of climate change, size and location of populations, transport mode share in cities, and the use of energy in buildings. Gathering this evidence is difficult because:

- Baseline data often doesn't exist so it is difficult to make a comparison to the situation where climate action is taken

- Data for analysis is: not available to cities; held centrally; gathered in incompatible formats; and/or not properly sourced

INFLEXIBLE

- Analysis of the data requires huge data storage and processing capacity, beyond the wherewithal of city government

- Analysis requires capacity and expertise beyond the ability of city staff to implement, or requires costly consultancies, which cities can't afford

For Shenzhen, the issue of **data format and consistency** was a major stumbling block in taking climate action. *"[The issue is] not that we don't have enough data, but it's not standardised or consistent. Companies and agencies are reporting different data… there is lack of consistency across the data, there is a lot of noise in the data, we don't know which is important, the units are different, sometimes we have some data that is not reported the following year. [There are] quite big inconsistencies."* C40 representative

Respondents, particularly in the Global South, commented on the **need for better evidence of the benefits of climate action.** This type of data, they argued, would allow mayors and city staff to demonstrate that climate action need not be considered contrary to other important urban agendas like health or economic development. It is clear that C40 cities recognise the wider co-benefits. When C40 asked our cities about the wider reasons for taking action they identified health, social and economic benefits as being major drivers (Figure 3). However, during interviews city and C40 staff made it clear that our cities face challenges accessing the data to demonstrate or quantify these benefits.

Figure 3. Number of times mixed benefits were cited as being a motivator in taking climate action[10]
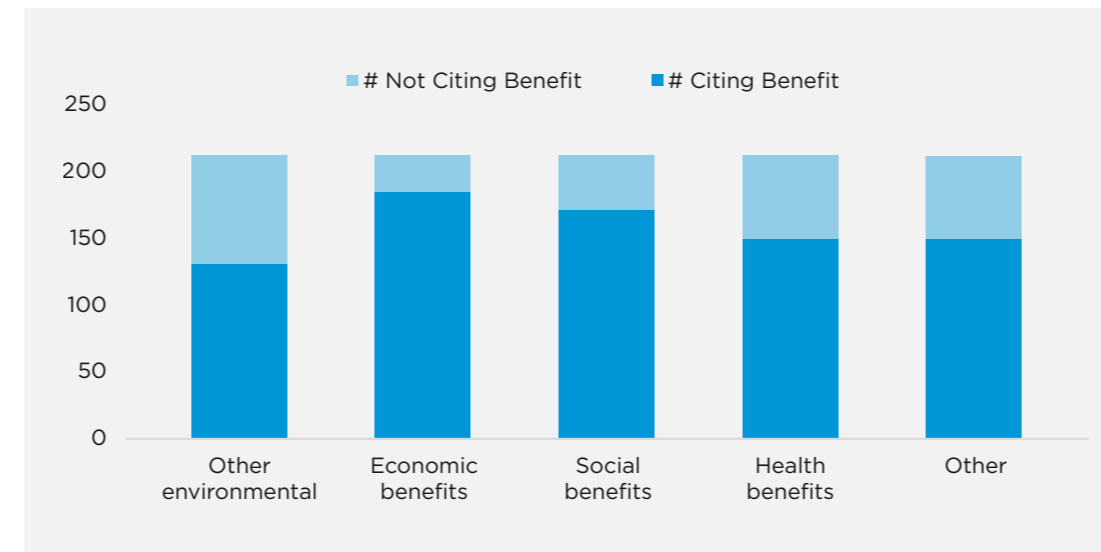
"Of the benefits of climate action that cities are concerned about, economic benefits often feature particularly prominently. A Singapore representative noted "Individuals and businesses often take action on the basis of cost and practicality. For example energy efficiency and investment into clean energy have fairly large upfront costs but long-term economic benefits, once you quantify these and show the overall economic benefit then you will get greater buy-in."

Economic analysis of costs and benefits is often critical to coalesce support for a project both within and outside of a city. **Establishing a robust and comprehensive economic case for a climate change**

project requires considering the full spectrum of socio-economic benefits, costs and risks, from reduction in emissions to creation of new jobs. A climate action that cannot be justified on economic grounds is one that will struggle to gain traction and provide value.

Both city practitioners and C40 staff identified that there isn't sufficient guidance that supports the incorporation of climate change issues in economic analysis. Challenges include the following:

- What are the appropriate time horizons and discount rates for economic analysis of projects or programmes that address climate change?

- What is an appropriate social cost of carbon that can be used in economic analysis?

- How can climate change risks and resilience benefits be incorporated into economic analysis, given their high level of uncertainty?

- What broader co-benefits can be incorporated into economic analysis, such as air quality, economic productivity or job creation?

- How can climate change become a standard factor, automatically considered in all project appraisals?

Without a strong economic case for action, it is difficult to justify spending money on climate actions – whether from the government's own treasury, national government, or national or international development banks.

CHALLENGE EXAMPLE:
RIO'S GREEN SPACE EFFORTS

Rio de Janeiro is home to 6.45 million people with nearly 13 million living in the greater metropolitan region. Brazil's 2010 census estimated that 22% of the population live in informal settlements that have very little access to green space. While Rio has some large parklands in the city they are concentrated in wealthier areas and inaccessible to many residents in their daily lives. This lack of green space in more disadvantaged areas of the city has serious consequences for the residents, particularly as temperatures increase due to climate change. Urban heat island effect (localised warming due to prevalence of buildings and hard surfaces in urban areas) combined with the tropical climate of Rio, mean that temperatures can become extreme in these communities. To address this issue and to help improve the public façade of these parts of the city, Rio de Janeiro has adopted policies aimed at improving the distribution of green space.

Barriers encountered

While the benefits of these green spaces extend from environmental, to economic and social, the City of Rio de Janeiro has struggled to demonstrate this value to the community ahead of the projects being completed. *"It really adds tangible economic and environmental value to a city but this is not necessarily clear in people's minds."*

There is even a mind-set present in the city that actively opposes the introduction of trees. People will cut down trees or branches if they obscure their view, or they will advocate for public squares, but not want those spaces to include trees or other greenery. *"Green spaces add a lot of quality to wellbeing and ambience of urban environment, but there are parts of the population that don't have a good understanding of this, so we need to prioritise the value."*

However, Rio had struggled to demonstrate these benefits before the park was built. The existing evaluation process for this kind of policy made it difficult to demonstrate to the community and the council what the gains would be. Rio needed to be better able to articulate what it means to have a green city, and how it is beneficial to residents.

There are success stories to be found. Recently, Rio de Janeiro constructed Madureira Park, the third largest park in the city, located in one of the most built up areas of Rio. The park provides recreational areas for the nearby residents twenty-four hours a day and has facilities like playgrounds, ping-pong tables, skate parks, etc. The park has been developed to minimise its environmental impact and includes facilities for harvesting storm-water run-off and solar panels for the visitors' centre. The park has also created benefits for nearby residents by lowering the temperature in surrounding areas by about 2 degrees Celsius, which has a strong impact on energy consumption (e.g. air conditioning). The local community is very satisfied with the new park and the range of facilities available means it hosts many co-benefits including *"stimulating the people to enjoy and promote sport activities and have a healthier way of living."*

CITY AND PARTNER SUCCESS STORIES

Vancouver's Data-Driven Approach to Green Economic Development

In 2010 the City of Vancouver set a target to double the number of green jobs and assigned the Vancouver Economic Commission to deliver this. *"Vancouver is building a resilient economy; this includes diversifying and focusing on innovative sectors such as the Green Economy. Our efforts have paid off, with an average of more than 3 percent growth over the past five year."*

A critical first step towards operationalizing this Green Economy strategy was to learn about Vancouver's green economic growth drivers, as well as the policy and investment levers that could help reach the target. Vancouver built on a robust methodology and definition originally crafted in 2010, and established growth trends and projections to 2020. Vancouver went further to measure the impact of its own economic development and Greenest City initiatives. *"Using a custom built model to project employment growth in key green sectors, we examined the influence of green policies and programmes on green job growth."*

In addition to macro-level factors, Vancouver reviewed local, city initiatives, including economic development programmes such as a Green and Digital Demonstration Program and a Green Enterprise Zone, and identified ones that had the potential to impact green jobs. *"We estimated the total investment expended for each initiative, and combined this with 'best fit' employment multipliers, leverage ratios for private sector investment and green 'intensity ratios' to forecast the total employment impact."*

The data highlighted at least 20 initiatives that were supporting Vancouver to achieve its goal of doubling the number of green jobs by 2020. *"Green Economic growth is of course driven by market forces, but it is also supported by positive policies that pave the way for programmes and initiatives that enhance the green business sector."*

Singapore Marginal Abatement Cost Curves to Evaluate Economic Costs

Costs and benefits to the economy are considered in developing measures. *"We determined both the up-front capital investment costs and longer-term operational costs and savings, enabling us to evaluate whether an action is beneficial to the economy in the long run. If we can demonstrate positive benefits, it forms a fairly strong case."*

Singapore used marginal abatement cost curves to evaluate the economic benefit of potential options available to them. *"We line up*

all the different measures you could consider across different sectors and compare them in terms of marginal cost and abatement. We also consider feasibility of implementation, taking into account stakeholder feedback, to help develop an optimal mix of measures to meet mitigation goals."

Bogotá demonstrates the benefits of Bus Rapid Transit

Bogotá commissioned research to assess the private and public costs and benefits of their TransMilenio Bus Rapid Transit (BRT) system. The economic, social, and environmental benefits were
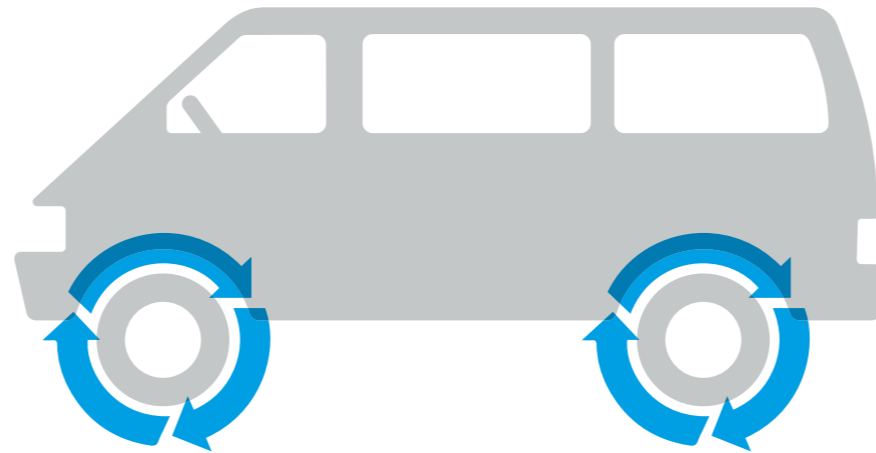

assessed through cost-benefit analysis. The benefits were calculated by comparing the current situation with the hypothetical situation without the project over a 20-year period.

Bogotá city's research included estimated costs and benefits of improved travel conditions, such as travel times, reduced accidents, and reduced operating costs. Environmental benefits and the impact on physical activity were estimated. From this assessment City of Bogotá has been able to demonstrate that the BRT system's benefits amount to a net present value of $3,759 million and a benefit-cost ratio of 1.59. Over a 20-year period, it gives a 23% internal rate of return (higher than the minimum 12% from national authorities).

Rio's Operations Center

When Rio de Janeiro took stock of risks and challenges – from extreme weather, to traffic congestion, to upcoming mega-events, it decided to create the Operations Center in the service of Cariocas (the citizens of Rio de Janeiro).

Integration of information in real-time is the main function of the Operations Center, allowing decisions to be based on the best data, and carried out across all City departments. Highly-skilled operators are able to anticipate natural disasters such as landslides, and alert affected communities, and to improve the response time to any sudden occurrence in the city, such as accidents and fires.

11 Seizing the Global Opportunity: Partnerships for Better Growth and a Better Climate. New Climate Economy, 2015

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C40'S APPROACH

'Benefits of Climate Action' Work Programme

C40 is establishing a framework for measuring benefits from climate action, and populating a widely accessible database of evidence of these benefits. As a result, next time a city is considering implementing a congestion charge, for example, they will have evidence of the reduced hours spent in traffic, improved air quality, reduced levels of diabetes and asthma, and so on. This supports a more objective evaluation of the best options to achieve overall goals such as quality of life or economic development. This work programme will:

- Establish a framework and language for describing, measuring and comparing benefits of policy actions across different sectors

to enable the extensive collaboration necessary, deliver a rigorous approach to categorizing benefits, and support all actors to develop evidence that can be compared and is of standard quality.

- Collect data and make it widely available to cities and other practitioners – work with a broad range of stakeholders to develop primary data on the benefits of actions they are involved in or wish to target. Provide the material for city officials to demonstrate the broad benefits of climate action to their mayors, their electorates, or higher levels of government.

New Climate Economy – Accelerating Low-Carbon Development in the World's Cities

The New Climate Economy (NCE) is the flagship project of the Global Commission on the Economy and Climate, which explores the synergies between economic growth and a better climate. The 2015 NCE report *Seizing the Global Opportunity*[11] included a particular focus on cities. The report demonstrated that low-carbon cities represent a $17 trillion economic opportunity. The report highlighted that at a global scale, compact, connected, and coordinated cities can generate stronger growth and increase the health and wellbeing of urban citizens.

C40 and NCE are continuing to work together to build on this research and present an even more comprehensive case for the global economic benefits of climate action.

C40's Measurement work-stream

C40's Measurement work-stream supports cities by: developing standards, processes, and tools; providing access to training and technical support; and facilitating knowledge transfer and peer-to-peer exchange. These functions help cities to adopt a more strategic approach to tackling climate change, measuring progress and impact at city and project levels, and gaining insight through analysis and benchmarking.

Taking action on climate change begins with a thorough understanding of greenhouse gas emissions. This allows cities to determine where to best direct mitigation efforts, set emission reduction targets, create strategies to address climate change, and track progress.

RESETTING THE CLIMATE NARRATIVE

Making the case for climate action in cities – economically and politically – is an area of significant focus for cities, their partners and, in particular, C40 as an organization. City and C40 staff have identified that a global effort is required to develop the evidence and capacity to deliver a shift in the climate narrative.

City practitioners are seeking ways to:

1. Build on C40's Benefits of Climate Action work programme

The Benefits of Climate Action work programme aims to build a comprehensive and flexible information base for cities to demonstrate how climate action contributes to diverse urban agendas. Evidence will need to be developed and collected across all regions, sectors and urban agendas and will require collaboration with academia, national government, the private sector and communities.

2. Ensure information on co-benefits is linked to practical planning processes.

City practitioners would like to harness information on the co-benefits of climate action in support of holistic, intelligent urban planning. This would allow climate action to be integrated with efforts to alleviate poverty, improve health and increase productivity, maximising the impact of limited resources, focus and priority. This is the full paradigm change necessary for delivering a climate safe future.

Cities are seeking support information and systems to allow them to improve their long-term planning processes and adequately incorporate the complex, interconnected information that can inform this approach to urban planning and development.

THEME 4
UNDERSTANDING AND ENGAGING URBAN STAKEHOLDERS

Climate action is critical to better urban development, ensuring sustainable, functional and liveable cities into the future. However, the interview results indicated city staff often struggle to articulate and demonstrate the importance of climate action in contributing to these outcomes and to engage different stakeholders effectively to build consensus for climate action.

City staff report that **data alone is often not sufficient to get approval for action.** In some instances, the data does not tell the most compelling story for the audience they need to convince. Other times city staff lack the expertise to present the data in appropriate ways and sometimes policy decisions are informed by other factors entirely.

For effective climate action city staff must **engage with a diverse set of stakeholders and develop and deliver messages through a variety of communication channels.** C40 cities use a variety of mechanisms for engaging with the community as shown in Figure 4. However, cities reported a range of challenges that have prevented effective communication in the past including:

- A lack of communication expertise and training for city staff

- Poor resourcing or prioritization of communication

- Risk-averse approach to communication within government that prevents them from communicating on certain topics or at particular stages of project processes

- Lack of control over the message that is delivered – particularly where media, national government or other powerful messengers are competing for stakeholder attention

- Lack of appropriate technology or techniques to reach the target audience

- Low levels of trust from some stakeholders that prevent them from engaging with any communications from government

- Mismatched messengers – business leaders are more likely to trust other business leaders than NGO representatives

- Poor understanding of what the audience values, and therefore ability to target their message effectively

Figure 4. Platforms used by cities for public engagement.
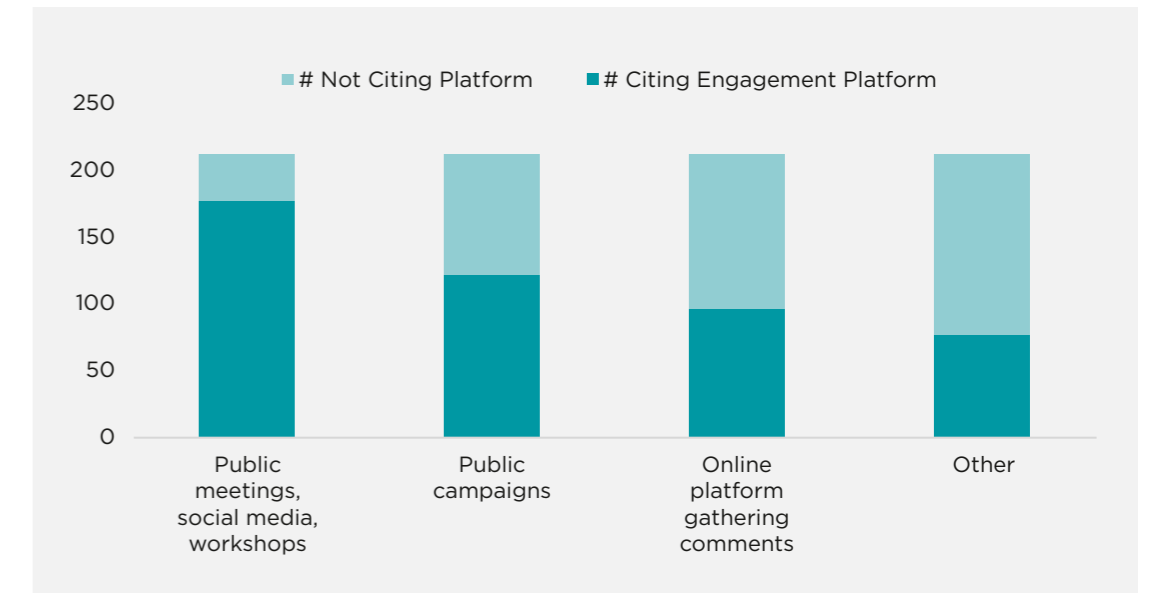
For Guangzhou representatives, communicating about climate change is a challenge, which they are taking increasingly seriously. *"Right now the living standards of our cities are not as high as in developed countries so its very important for our citizens to understand the benefits of acting on climate change."* Guangzhou is linking climate change to other programmes and issues that are important to the community in order to help the communication effort. *"We are trying to combine work on climate change and ecological buildings, so through the improvement [to buildings] citizens are becoming more aware of the importance of work of climate action."*

Social norms, the often unspoken values, beliefs and behaviours that are accepted and encouraged within a community, can also impede effective stakeholder engagement. Social norms are often deeply embedded and difficult to shift or change. In many instances, city and C40 staff have identified that the existing values, beliefs and behaviours in a city form a barrier to effective climate action.

For example, in many cities in the US there is a strong car culture. Car ownership rates are as high as 9 in 10 people, compared to 0.8 in 10 in India and 2 in 10 in China[12]. This dependency on cars often creates a barrier to developing an alternative development model. Mobility issues are framed around how to move cars across the city without congestion, so solutions offered usually include building more roads or improving road function. If this could be reframed in favour of reducing the need for cars, it would allow exploration of alternative solutions like improved public transport, transport oriented development or telecommuting. The Houston city case study below explores this issue in more detail.

Another aspect of this barrier is **ingrained and endorsed behaviour.** Research has shown that even if people have changed their values and beliefs they don't always behave in accordance with those beliefs. In fact, some research suggests that the reverse situation is true, and it is changes in behaviour that lead to changes in values. If current endorsed behaviours do not support climate action, it can be difficult to understand how to catalyse change, as Singapore reported; *"Surveys show that awareness [is] high… [but] we have not figured out how to turn this into action".*

CHALLENGE EXAMPLE:
HOUSTON'S PUBLIC TRANSIT IMPROVEMENTS

Houston is the fourth largest city in the US. with a population of about 6.5 million. However, it covers an area of nearly 600 square miles (~1500 km^2) making it very low density. With its population spread out over such a large space, it is very difficult to implement effective public transit systems, and hence transport in Houston is largely car based and fairly high emissions.

Houston's denser areas occur in six separate downtown districts which cluster businesses, often according to their sector. Spreading business hubs between these districts helps to manage traffic within the city, but creates a challenge for public transport. *"Houston is very spread out so transport is a huge issue. If you have multiple clusters of denser development there is less of an issue; if you have good, robust, multiple transportation options it avoids the issue of everyone going to one central point or downtown area."*

The City of Houston is implementing public transit improvements, including overhauling the bus system away from a traditional hub and spoke model, to one that serves people wanting to travel between the six downtown areas. The new system *"increases the level of frequency and number of buses, and makes more sense for a city that has different nodes."* Houston is also implementing a Bus Rapid Transit system to help improve public transit options to Uptown Houston.

The City has faced challenges in reaching political consensus about the development of the BRT. There was such deep political opposition to the idea that the use of the term BRT even became unpalatable. *"It got to the point where they had to call the BRT something else in order to get support – an example of what the management team were facing with that project."*

The project managers demonstrated flexibility in the project development and particularly in their terminology. Referring to dedicated bus lanes rather than BRT meant they were able to improve the level of political support for the project.

Another critical step for convincing citizens of the benefits of the bus programme was engaging with powerful stakeholders outside the city government. The project team was able to get strong ***"buy-in from the business community in that district"***. These businesses not only added their voices to those calling for the development but actively contributed to creating a customer base. *"Companies are embracing their employees opting for different transportation options – that's basically either through incentives or employee campaigns."*

Leadership from the Mayor was also helpful in progressing the project. *"The whole leadership aspect is important, if the Mayor wants to lead on climate change then the city needs to take those steps first.…There are still council members to bring along too, but I think we've done a fair job to make strides in these climate action strategies."*

CITY AND PARTNER SUCCESS STORIES

Buenos Aires Metrobus Bus Rapid Transit

The City of Buenos Aires successfully implemented a Bus Rapid Transit (BRT) corridor on Juan B. Justo Avenue. Encouraged by the success of this project the city launched a larger project to implement a BRT corridor on the iconic 9 de Julio (July 9 Ave). 9 de Julio is the widest avenue in the world and passes through Buenos Aires' landmark Plaza de la Republica.

The city quickly faced strong backlash in the press and had to respond. Buenos Aires launched a comprehensive communication and engagement effort to make the case for the BRT development. They engaged all the critical stakeholders – drivers, pedestrians, neighbours, passengers- with targeted information highlighting various benefits of the development, ranging from environmental benefits, reductions in traffic and faster bus travel times. The message delivery was targeted for each stakeholder. For example, information for bus passengers was advertised on buses and at bus stops.

The city made a concerted effort to place this project into historical context. They highlighted that the 9 de Julio has evolved continuously since its creation. Placing the new BRT within this storyline of ongoing improvement helped to frame it in a positive light.

As a result of their comprehensive and targeted communication efforts the new BRT received very positive press coverage, has strong usage, has seen 90% favourable reviews by commuters when surveyed and has received international recognition through numerous awards. Since then Buenos Aires has developed plans to expand BRT throughout the city.

Jaipur Unite

Jaipur has launched a programme called "Jaipur Unite". The programme capitalises on new found energy and optimism particularly prevalent in younger generations, interest in social media and the growing community desire to contribute to making their surroundings more beautiful. The campaign aims at reducing waste and improving the aesthetic of the city's green spaces. *"We asked citizens 'what do you want to do in your area to improve it?' We encourage you to make improvements. If you need resources, e.g. paint brushes or tools to pick up rubbish – everything except manpower, we will provide it."* Jaipur has found that the programme is successful largely because 'before and after' pictures clearly show the success local community groups have had. Civic actions in one area of the city are then inspiring others to take similar action. *"It really shows that experiments can work. Already energy and drive among citizens to be part of a bigger movement – this has a knock on effect on everything."*

Athens' SynAthina Platform

SynAthina is a digital platform designed to connect citizen groups, municipal services, sponsors and researchers for the implementation of small-scale projects that upgrade the quality of life of urban citizens. Its aim is to devise solutions to local problems, ensuring solid foundations and sustainable policies for the revival of Athens' neighbourhoods.

This platform complements Athens' overall strategy on citizen engagement and participation, which includes public consultation for any important policy papers, activity or project that is taking place in the city. Public contributions and engagement are sought in writing or facilitated through public meetings and briefing events.

C40'S APPROACH

Polisdigitocracy

Polisdigitocracy aims to leverage the benefits of digital technology to drive meaningful citizen engagement to make our cities more sustainable, liveable and equitable. C40 cities need every tool available to address climate change effectively, and Polisdigitocracy can be a powerful instrument. To support this approach, C40 and Arup authored a report, *Polisdigitocracy: Digital Technology, Citizen Engagement and Climate Change*[13]. The report shows that many C40 cities are already leading the way. Drawing on the insights provided by this report, C40 is embedding Polisdigitocracy more firmly within C40's transport, waste, energy and adaptation networks and deepening our capacity to convene city information officers to learn from their peers around the world.

C40 – Novo Nordisk partnership

Novo Nordisk and the C40 Cities Climate Leadership Group (C40) are undertaking a research-based partnership aimed at establishing that green policies in cities are beneficial to both the state of the environment and the health of their citizens. The collaboration will see the organisations' expertise and specialist knowledge combine to generate new insights on a range of co-benefits of climate action – in particular the health of city populations.

At the heart of the partnership lies the pivotal role of cities in the fight against climate change and poor health. City lifestyles are contributing to the diabetes epidemic and two-thirds of the world's 415 million people living with the condition can be found in urban areas. Meanwhile, the rapid rise of cities accounts for two-thirds of global energy consumption and more than 70% of carbon dioxide (CO_2) emissions. By demonstrating the most effective actions in addressing these two critical urban issues, C40 hopes to be able to mobilise more resources and stakeholders.

UNLOCKING THE POWER OF CITIZENS

City staff identified that engaging and communicating with the broader community is critical to successful climate action by the city government. Because community opinion directly influences the political priorities of a city government, community actions will determine the success or otherwise of many climate programmes. Because there is enormous knowledge, capacity and resource within the community that can contribute to successful action, city practitioners are seeking ways to improve their ability to engage and communicate with stakeholders throughout the community. From our surveys and interviews city staff have indicated that they are interested in discussing how to:

1. Establish broader partnerships at an international, national or city scale that can facilitate alignment between the environmental agenda and other existing values of the community.

Many organisations at an international, national and local level work closely with communities and key stakeholders. Where agendas align there is potential to leverage these existing social and professional networks –whether climate focused or not- to enhance climate action delivery. City governments are interested to identify which groups they can most effectively work with to strengthen their mutual messages.

2. Show how climate action will contribute to achieving their existing goals.

Building on C40's Benefits of Climate Action work programme, it will be useful to identify delivery mechanisms, tools, and resources that can support cities to deliver information about the benefits of climate change in the most impactful and relevant way possible. This will also involve developing improved understandings of the key priorities and preferred communication methods of stakeholders – including urban citizens.

3. Use trusted messengers to engage with different stakeholders.

City governments want to share experiences and learnings about the best groups or types of groups that can most effectively work with cities to communicate with various stakeholder groups about climate action. For example, using business leaders to communicate with other businesses can be extremely effective but requires identifying the right messenger.

4. Identify examples of effective, creative campaigns to communicate and raise awareness.

City governments are interested in collecting and analysing examples of effective and creative campaigns that could inform the design of future climate communication. These examples need not be restricted to the climate change topic, or even to city governments. Part of improving city capacity to engage with diverse stakeholders is likely to involve communicating in new ways and mediums that are unfamiliar to cities. C40 recently partnered with global outdoor advertising companies to display key climate messages on digital billboards in cities around the world.

5. Harness new communication technology to allow more effective two-way communication between city governments and their stakeholders.

Building on the insights of *Polisdigitocracy: Digital Technology, Citizen Engagement and Climate Action*, a report launched by C40 to examine the use of open data, social media and digital technology to drive citizen engagement, cities are keen to work together and with key stakeholders to identify how best to use new communications technology to aid the understanding and uptake of climate action.
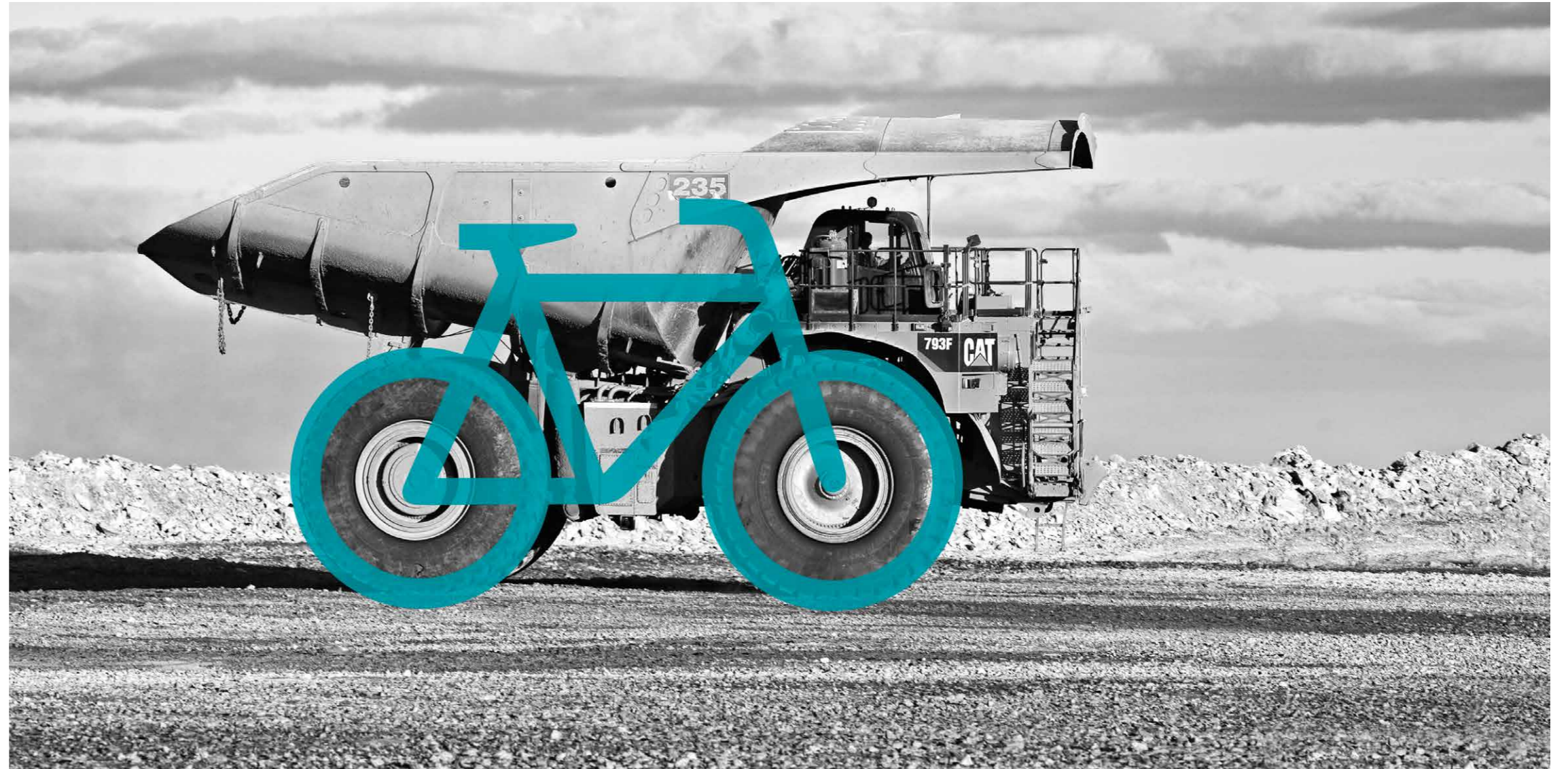
PROGRESS

THEME 5
COLLABORATING WITH THE PRIVATE SECTOR

The private sector is a pivotal partner in effective city climate action the world over. Private sector organisations may be funders and investors; service providers (e.g. management consultants supporting development of plans); operations and maintenance providers (e.g. operating a bus franchise); deliver monitoring and enforcement of policy (e.g. internal audit); or deliver infrastructure (e.g. design and build contractors). When these collaborations are hindered, it increases the cost of delivering action, impacts productivity and jobs, and limits innovation and effectiveness in trying to address the cities' needs and objectives.

Cities interact with the private sector in two main ways. The first is as a customer, procuring services and goods from private sector providers – either to service city government operations or to provide services to the public on behalf of city government. The second main way that city governments interact with the private sector is through policy, legislation and programmes that create a stable investment environment and often new markets for private sector actors.

As a customer of private sector goods and services cities often face **challenges balancing due process and transparency with flexibility and innovation.** In Johannesburg city staff reported that in order to implement a project on energy efficiency, for example, they have to put it out to tender for private contract. *"The contracting becomes very difficult in the sense that our municipal finance is not very flexible about how we can contract. The third party contractor may want to do off-balance sheet funding, which we are not able to do."*

Early engagement with the private sector can support the development of solutions that are far more tailored and responsive to the needs of cities, and therefore more likely to deliver successful outcomes. However, City staff report challenges around pre-procurement engagement with the private sector, which can be seen as a risk to transparency and competition. The private sector may also be disincentivised to invest resources to engage with cities prior to the tender process if there is no guarantee that they will be awarded the contract. Finding the right balance in city procurement processes that allow for earlier engagement with the private sector to develop bespoke climate solutions while still promoting fair and transparent competition was identified as a challenge that many cities share.

Often times, there is **insufficient familiarity and interaction between city authorities and the private sector.** City practitioners identified several areas where there was a lack of knowledge and experience:

- with the solutions, approaches and technologies that are available in responding to climate threats

- the needs of private sector organisations

- the needs of cities in taking action

Cities face significant barriers when working to procure services or goods under public-private partnership (PPP) models, especially for large projects. Barcelona representatives stated that *"strict, onerous tendering legislation makes implementing PPPs difficult and slow. We only use PPP for big projects, e.g. district heating and cooling networks."*

To facilitate **the green economy,** city administrations need to be able to inspire and enable the private sector. City staff need to 'speak the language' of business in the relevant sectors, and build skills in presenting policies in ways that showcase the business opportunity. However, city staff often do not have the relevant knowledge, skills or resources, which can limit or prevent cities from taking on these roles effectively and therefore restrict effective climate action.

Cities also need to build their **capacity to act as incubators of new green businesses.** Many new, green businesses are small, and find it difficult to move into new markets, particularly internationally. Inflexible business environments within cities and a lack of communication around the unique business offerings being developed can prevent these organisations from reaching their full scale.

C40 and city staff identified that policy certainty affects the success of policy, legislation or programmes to encourage private sector climate action. Where policy conditions change regularly, private sector investors become cautious and often don't engage with new projects.

DISENGAGE

CHALLENGE EXAMPLE:
WASHINGTON D.C. ENGAGES WITH THE PRIVATE SECTOR

Like many other cities, Washington D.C. faces challenges accessing money for climate action. *"Big green infrastructure needs public and private dollars,"* the city notes, however it faces challenges in combining the use of private and public funds. As a result feels that it is missing out on opportunities for more funding.

City staff from Washington D.C. identified that one of the barriers to investment from the private sector is a lack of familiarity between the private and public sectors.

Complex legislative requirements around how cities can access and spend money also creates further barriers. *"There are a lot of controls on how we can accept private money and a lot of controls on how we can spend public money."* This leads to nervousness from both sides of the process. The city wants to ensure that new approaches are legal and appropriate and have the necessary controls and approvals associated with them. This creates delays in the process which makes the private sector less inclined to engage. Because the legal situation that controls how a city can and can't access private sector funds is very specific and complex, Washington D.C. identified the need to understand the situation

more fully. "We are doing a study (which came out of the Green Bank Taskforce) to delve into legal questions around what we can and can't do." This research will allow the city and the private sector to have more confidence in the partnerships that are developed, as they can be certain the approach being taken is in accordance with legislation.

Recently Washington D.C. has also implemented a programme that has encouraged the growth of private sector investment in solar energy. Washington D.C. created legislation to allow third party power purchase agreements, which has encouraged strong growth in the solar sector.*"The [residential power purchase] market is starting to grow much more quickly…. [because] people don't have to pay anything upfront. Not every state in the US does this; our policy has created a situation where the market takes over and does a lot of the work. Then we're able to take the limited resources we can provide and focus on low-income, high-need populations."*

The city hopes that the success of this approach can show how to work effectively with the private sector and can help pave the way for future sustainability projects.

CITY AND PARTNER SUCCESS STORIES

Melbourne's renewable energy investment

The City of Melbourne, a fairly small area within the greater Melbourne metropolitan area, identified several barriers to increasing the generation of renewable energy, for use in the city. They turned their attention to barriers that they had some means to control or overcome.

The City of Melbourne identified that renewable energy generators needed to ensure they have a market for their energy generation. *"There are lots of generators of renewable energy wanting to invest in Australia but they can't access customers that are large enough for single projects."* The city also looked to its strengths: *"Melbourne is a good collaborator with private and public institutions, it is part of the city DNA… The city has a great role in setting a vision and then convening groups of people around that."*

By combining these two insights, a solution presented itself. The city identified 15 large organisations and institutions based in the city that have renewable energy targets. *"We have established a group of large energy users, 15 businesses seeking to drive investment in renewable energy to deliver on their own carbon targets."*

This group is working together to meet their collective targets by going to the market as a group and asking for renewable energy. *"We are in the midst of developing a tender to go out to market to ask for new renewable energy upstream in the grid to be built for our demand,"* said one Melbourne representative.

Private sector engagement approaches

Several organisations and initiatives exist that aim to help cities interface with the private sector, such as Global Cities Business Alliance and, specifically related to climate change, We Mean Business. They provide forums to establish familiarity between public and private sector requirements, expectations, modes of operation, and in many cases, simply offer opportunities for introductions between the professionals in both sectors. The evidence in this report implies that such efforts should be greatly enhanced to cover all sectors of climate action.
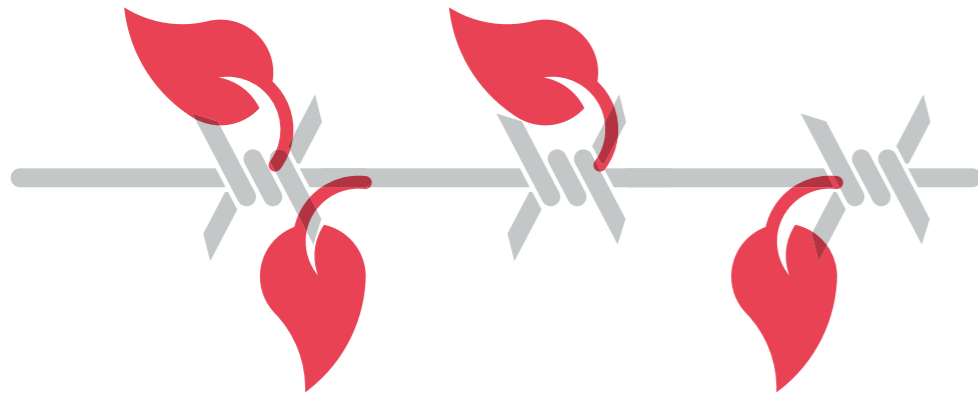
C40'S APPROACH

City Solutions Platform

C40, the Danish Cleantech Cluster (CLEAN) and the International Cleantech Network (ICN) have launched a forum for engagement between innovative private sector solutions providers and megacities with complex challenges. This platform of co-creation is to accelerate the implementation of high quality sustainable solutions in cities through project focused engagement and partnerships between the public and private sectors.

The City Solutions Platform brings together participants from cities, universities, research institutes and the private sector dedicated to developing solutions for a range of identified challenges. The platform design allows a series of regular meetings as well as specific workshops and "hackathons" where participating cities and solution providers come together to develop solutions.

Through this collaboration, C40 cities will be able to articulate specific challenges they wish to resolve and to look for innovative solutions with different procurement models. ICN and CLEAN will aggregate technologies, build consortiums and identify possible project funding sources to accelerate the development and implementation of solutions.

BUILDING COLLABORATION BETWEEN PRIVATE SECTOR AND CITIES

Genuine collaboration between cities and the private sector will be essential to a comprehensive urban response to climate change. The priorities for city practitioners are as follows:

1. Improve understanding within city government of the needs and capacity of the private sector.

City governments are aware of their limited resources and expertise in working with the private sector. City practitioners are looking for platforms and forums that allow them to identify relevant cutting edge technologies, business models and techniques that the private sector can supply to address the challenges cities face. In addition, they are looking for support to build understanding and skills to establishing investments, actions or proposals that are commercially viable and attractive.

2. Develop transparent, productive working relationships with the private sector.

City governments want to ethically and transparently support the private sector to be aware of business opportunities that can arise from engaging city government. City governments are seeking mechanisms that can assist the private sector to reach out or innovate to help cities address climate change. These interactions can also help to build mutual trust between the two sectors.

C40 has established the City Solutions Platform, which provides a forum for engagement between innovative solutions-focused businesses and megacities with complex challenges. The Platform specifically aims to accelerate the design and implementation of high quality sustainable solutions in cities through project focused engagement and partnerships.

3. Improve procurement processes for greater flexibility and robustness.

Establishing effective communication throughout the procurement process, particularly during pre-procurement, is key. Improving city transparency and financial performance, is also an important next step for many cities.

4. Support cities in establishing positive brands and reputation.

City leaders are interested to learn, from one another as well as other experts, how they can actively position and market themselves in ways that attract private sector interest. For example, the International Relations Department in Barcelona has a clear focus on promoting their expertise in innovation and connectivity, and works to attract the interest of investors.

DELIVER

THEME 6
FINANCING CLIMATE ACTION

The triple challenges of ever increasing urbanisation, climate change and growing inequality requires significant flows of finance to cities to address these issues. City and C40 staff reported a range of barriers that city governments face when attempting to finance city climate action, including developing a sound business case, difficulty raising funds and challenges with funders' financing arrangements.

Once an action has been prioritised, it is often necessary to demonstrate that the action is financially viable. While some actions can be paid for out of the city budget, many require additional funding sources. For these policies or projects financial viability will be vital. In the case of climate action **developing a sound business case can be very complex** as this often requires engaging in new or innovative business practices. It is this complexity, and the skills and resources required to deal with it, that makes establishing the business case for action particularly challenging for cities.

"When the project is on the table, how do I make it a project that is fundable? This relates to our own capacity internally to make projects attractive to prospective funders to reduce the burden of capital spend on the city. If we can package projects well then they would be attractive," said a Johannesburg representative.

City practitioners report they lack the expertise and resources to:

• Accurately cost and scope projects, especially large infrastructure projects

• Design climate change projects so they are self-supporting or yield a profit where required. It is difficult to monetise many climate actions

• Understand the business considerations that would be necessary to allow informed investment from the private sector

• Know which risks the private sector can or will take, and which they are not equipped to deal with

Once the city has prioritised which actions to implement, and demonstrated there is a solid business case for specific action, they report remaining **challenges in raising the funds to implement those actions.** Figure 5 shows that aside from various forms of tax, most cities are very limited in their ability to raise funds or face restrictions on their financial autonomy. For instance, only 1 in 5 C40 cities are able to borrow from the state, and only 1 in 4 to issue municipal bonds. In addition, city governments vary greatly in their ability to exert full control and autonomy over revenue generated within the city, including local taxes and fees.

Figure 5. City power to raise funds
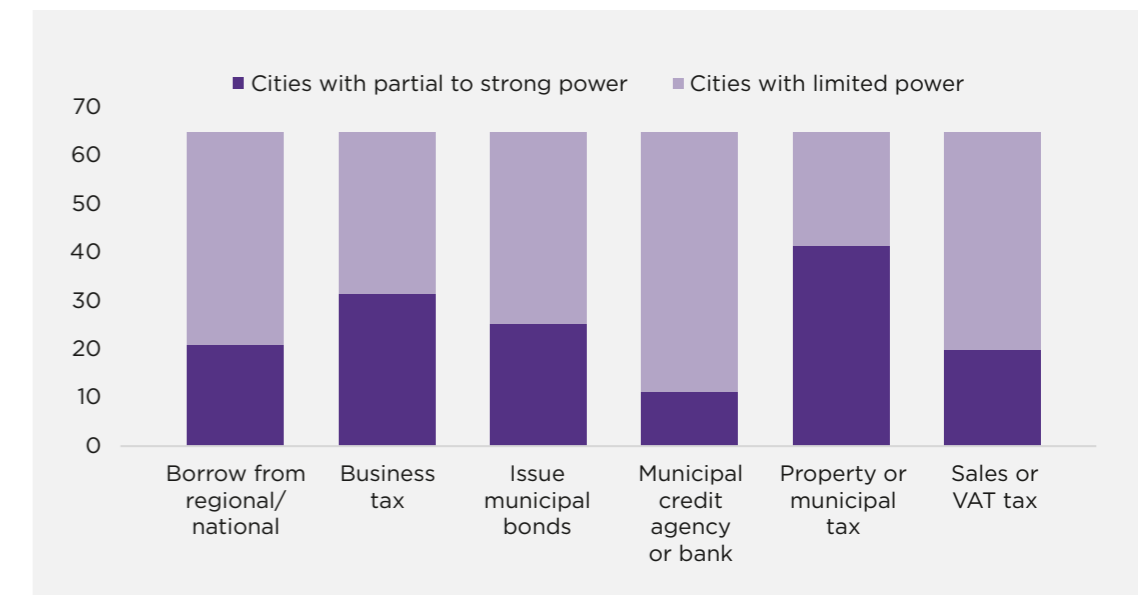
The survey indicates that developed cities need to access private sector capital in order to progress their climate agenda. Cities in emerging economies indicate that they are more reliant on international development and environmental agencies for their funding. Their access to finance was more often challenged by **funders' governance arrangements,** which prevent them directly working with cities, or by the city's own poor credit rating or financial performance.
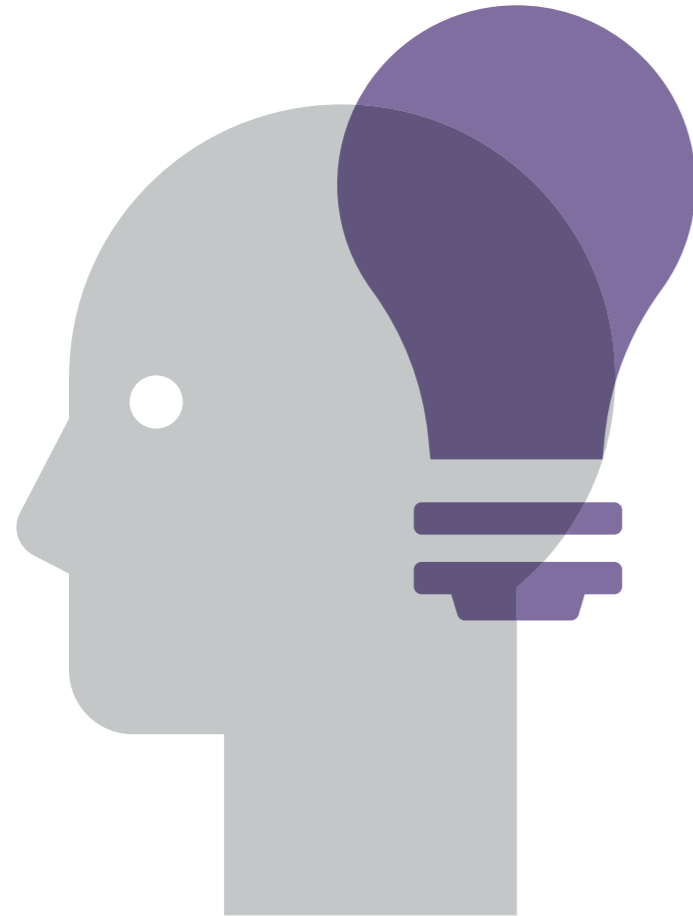
"With climate funding within the South African context all donor funding that we receive, that allows us to implement climate projects, has to go via [the national] treasury. We might not have direct access to the donor to negotiate how we can use the funds. Where we can negotiate directly with the funder, we have an implementing agent assigned at the national level. Sometimes we still have to apply to those funds, which might add requirements over and above the grant requirements." – Johannesburg representative

C40 regional staff noted that this can often be a challenge for cities in Southeast Asia. *"Some of the international development authorities have a difficult set of requirements that cities struggle with. For example, the World Bank supported Ho Chi Minh City in a green transport initiative. Discussions took a while because there were processes that the city had to go through that they were not familiar with. There was a very extensive impact assessment - not just environmental but social as well, ensuring they go through stakeholder engagement – its not that it is bad but cities are not familiar with the process."*

Similar barriers can exist in developed cities where national or regional (e.g. European Union) funding may be available, but the design of the programme places administrative hurdles between the city and funding. While the case has been made that there is significant financing available for climate change mitigation through international funds, the same cannot be said for climate change adaptation funding.

ADAPTATION FINANCE

Estimates of the cost of global adaptation vary, though the World Bank estimates that climate change adaptation could cost $70-$100 billion a year in 2050 using a scenario of 2 degrees Celsius temperature increase[14]. An estimate from the UNFCCC suggests the cost could be between $50 and $170 billion per year in 2030. In both instances, the numbers are likely to be substantial under-estimates – at a minimum by 2-3 times[15].

Despite this, existing global finance for climate change predominantly goes towards mitigation (76%)[16]. Of the funding spent on adaptation between 2010 and 2014 less than 5% was spent on cities[17].

Occasionally, finances for adaptation can become available following a climate disaster. While this can constitute a much needed injection of resources there are several issues:

- Finance is not available to prevent disasters from happening in the first place, or to undertake research that could inform how things are built back following a disaster.

- Funding may have limitations on how it can be spent that will not allow extra protection against increased future risk to be built into the response.

- Funding often has to be spent quickly, leaving less time to adequately plan to include effective adaptation actions.

14 Economics of Adaptation to Climate Change. World Bank, 2010.
15 Assessing the Costs of Adaptation to Climate Change: A Review of the UNFCCC and Other Recent Estimates. Grantham Institute of Climate Change, Imperial College of London and International Institute for Environment and Development, 2009.
16 Climate Finance Thematic Briefing: Adaptation Finance. Climate Funds Update, Overseas Development Institute, 2014.
17 ODI Working Paper 419 - Climate Finance for Cities: How Can International Climate Funds Best Support Low-Carbon and Climate Resilient Urban Development? Overseas Development Institute, 2015.

CITY AND PARTNER SUCCESS STORIES

HCMC gains private sector investment

In Vietnam, government funds are limited and often concentrate at the national rather than city scale. Therefore, cities like Ho Chi Minh City need to attract private sector investment for climate action. This kind of investment would not only help Ho Chi Minh City to progress its climate agenda but would also create high-profile projects that could raise awareness about climate change and demonstrate the benefits of climate action.

Currently there are no policies, procedures or other facilitating infrastructure to allow Ho Chi Minh City to engage with the private sector. The city government is working to address this by developing policy and legal systems that can support public private partnership.

The opportunity is substantial: *"Ho Chi Minh City is the biggest city in Vietnam, so if we can develop new policies for PPP here then we can be the model for the country."*

C40'S APPROACH

C40 Cities Finance Facility

The C40 Cities Finance Facility is a major project by C40, the German Federal Government and Inter-American Development Bank (IADB) to provide the skills, technical assistance and connections to funding opportunities needed to unlock up to US$1 billion worth of sustainable infrastructure in cities across low- and middle-income countries by 2020.

The C40 Cities Finance Facility, with €3.5 million ($3.7m) funding from the German Federal Ministry for Economic Cooperation and Development (BMZ) and $2 million from the IADB, will provide technical assistance to cities within the C40 network to help them prepare sustainable infrastructure projects for investment.

The initial $5.7 million is expected to ultimately reach as much as $20 million in technical assistance for cities, unlocking up to $1 billion worth of green projects worldwide within 4 years.

The C40 Cities Finance Facility will not only reduce greenhouse gas emissions – sustainable infrastructure investment will also improve urban life, public health and economic growth, targeted at cities in the Global South. For example, Lima's highly popular bus rapid transit (BRT) system was developed after the city received support from international experts, which in turn led to loans from Spanish bank BBVA and Banco del Credito de Peru. The C40 Cities Finance Facility will provide support to cities looking to develop similar projects that will help reduce their emissions and increase their resilience to climate change.

The Financing Sustainable Cities Initiative

WRI Ross Center for Sustainable Cities, C40 and the Citi Foundation are partnering together to help cities around the world accelerate the implementation of low-carbon urban solutions. By drawing on WRI's on-the-ground knowledge, C40's unique network of global city leaders and the Citi Foundation's agenda for urban economic progress, the Financing Sustainable Cities Initiative is developing new approaches to overcoming what is commonly, but mistakenly, seen as simply a financing gap.

The Financing Sustainable Cities Initiative - which consists of a learning community, technical assistance, and a web-based engagement platform - is designed to help city decision-makers, financiers and technical experts better understand their choices and work with one another strategically. By facilitating knowledge sharing and best practice, and creating a space for innovation, the initiative will facilitate close collaboration and open dialogue between cities, technology providers and capital providers. The partnership between WRI, C40 and the Citi Foundation is helping to foster a conversation today for the thriving, sustainable cities of tomorrow.

UNLIKELY

IMPROVING THE FLOW OF FINANCE TO CITIES

In many instances, addressing the other challenge themes of this report will contribute dramatically to removing barriers to financing climate action. For example, improving collaboration with the private sector could unlock new sources of financing for city governments, while improving city transparency and accountability can make cities more attractive partners.

As outlined above, the C40 Cities Finance Facility is a significant step towards addressing many of the challenges of this theme. C40 and its member cities invite partners to connect with them to expand and improve this facility and maximise its impact. While this is an important step to addressing the financing challenge, the following issues remain:

1. Identifying mechanisms to improve cities' ability to raise funds.

2. Finding new ways for global climate finance providers to engage more completely or directly with city governments.

CONCLUSION

Unlocking Climate Action in Megacities: The City Practitioners' View provides the most detailed analysis to date of the barriers that cities and their mayors face when implementing policies and projects that will deliver on their ambitions to tackle climate change. This is a vital step in overcoming these obstacles and realizing the scale of action needed if the world is to deliver on the 1.5 degrees target of the Paris Agreement.

By hearing from city practitioners what are the key barriers to climate action, the report hopes to establish a shared understanding and form the basis of an international, collective response. For every barrier identified, which is potentially holding mayors back, the report has sought to offer solutions and approaches that have worked in C40 cities as well as initiatives being delivered by C40 to help break down these barriers.

The common theme that defines each barrier and solution discussed in this report is the importance of collaboration between different stakeholders. Whether between levels of government, departments within city administrations, with the private sector, finance institutions or between mayors and urban citizens, barriers will only be overcome through mutual understanding and shared ambitions.

Drawing on the successes and frustrations of city leaders in trying to address these barriers to climate action, the report is intended to catalyse collaboration, research, projects and policies. It is intended that each of the leading challenges discussed in this document receives direct attention, in the form of committed and collaborative investigation and action to overcome them. C40 is already taking forward works and programmes to address each barrier, and this report will serve as a call to all those who work with or in cities on climate change to engage with city governments and accelerate climate action by:

• Establishing a new paradigm of government collaboration

• Enabling cities to lead from the front

• Resetting the climate narrative

• Unlocking the power of citizens

• Building collaboration between the private sector and cities

• Improving the flow of finance to cities

C40 and all our cities look forward to supporting efforts worldwide to break down the barriers that currently prevent city leaders from fulfilling their ambitions on tackling climate change. Through such collaboration and the initiatives detailed in this research we can make a climate safe, resilient and equitable future a reality.