EVALUATION OF SUPPORT TO C40 CITIES LEADERSHIP GROUP CITY FICHES
APPENDIX 3

JOHANNESBURG, SOUTH AFRICA 1
ADDIS ABBABA, ETHIOPIA 7
TSHWANE, SOUTH AFRICA 13
SHENZHEN, CHINA 19
RIO DE JANEIRO, BRAZIL 26
BOGOTÁ, COLOMBIA 30
NEW YORK CITY, USA 34
WASHINGTON DC, USA 39
COPENHAGEN, DENMARK 44
LONDON, THE UNITED KINGDOM 48
STOCKHOLM, SWEDEN 53
APPENDIX 3
CITY FICHES (VERIFIED BY CITIES)
JOHANNESBURG, SOUTH AFRICA

<table>
<thead>
<tr>
<th>Population (metro)</th>
<th>+/-4.8 Mil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayor</td>
<td>Mr Herman Mashaba (2016)</td>
</tr>
<tr>
<td>GDP (US$)</td>
<td>82.9 bn (2014)</td>
</tr>
<tr>
<td>Climate</td>
<td>Humid Moderate; Dry Winter</td>
</tr>
<tr>
<td>CO2 Target</td>
<td>30% reduction by 2025 compared with 2005</td>
</tr>
</tbody>
</table>

OVERVIEW

Johannesburg joined C40 in 2007 and is currently a member of six C40 networks. Together with Buenos Aires it is currently leading the Bus Rapid Transit (BRT) network. According to data collected by C40 (NOIR data), Johannesburg is implementing 10 actions within the C40 networks. Johannesburg has been active in a number of climate action areas, and has played a strong role in piloting a methodology for GHG inventories (GPC) and has also attracted attention for its innovation in sustainable finance, issuing a green bond in 2014 and winning the C40 Cities Awards 2015.

CITY CLIMATE PRIORITIES

Johannesburg has developed a Climate Change Strategy Framework (finalised in 2015), which was designed to further promote the sustainability agenda to sectors such as transport and planning. This framework has also been able to operationalise some of the mayor’s key climate objectives.

A key master plan relevant to climate change issues is also the Integrated Development Plan (IDP) for the municipality, which includes spatial planning, disaster management, finances, performance targets and economic development over the short, medium and long term. This plan includes indicators that also reflect key goals in the climate change agenda.

Johannesburg key climate action goals relevant to C40 include:

- Develop and deliver a high-quality BRT system (BRT).
- Reduce vulnerability to climate risks through improved planning and disaster management (CCRA)
- Assessing, measuring and reducing risks related to Climate Change (CCRA)
- Move up hierarchy of waste management, lower GHG emission from reduced disposal amounts and organics management while incorporating informal recyclers (SSWS)

C40 NETWORK MEMBERSHIP (2016)

- Bus Rapid Transit (BRT) (city co-lead)
- Climate Change Risk Assessment (CCRA)
- Land Use Planning (LUP)
- Private Building Efficiency (PBE)
- Sustainable Solid Waste Systems (SSWS)
- Transit Oriented Development (TOD)

CITY ENGAGEMENT IN C40

Johannesburg joined C40 in 2007. The invitation was sent to the mayor at the time, who was intending to set up the city Bus Rapid Transit (BRT) system. Together with the Clinton Climate initiative, C40 provided a focus on climate change mitigation and other support to actions such as retrofitting and climate proofing. Johannesburg is now a steering committee Member.

According to technical officials consulted from different sectors, Johannesburg’s participation in C40 follows a needs driven approach for each network. This means that officials will identify the sector needs and challenges and look at how C40 can help them respond to these issues. For example, engagement in the Sustainable Solid Waste Systems (SWSS) network is driven by first understanding the priority challenges for the city in the waste sector. e.g. a shortage of landfill space for disposal and then looking for solutions to respond to this challenge.

Figure 1 Number of C40 interactions with other cities, by network – Johannesburg (Q42013-Q42015)

Over the period 2013-2015 Johannesburg has been most active in the Bus Rapid Transit (BRT), Sustainable Solid Waste Systems (SSWS) and Climate Change and Risk Assessment (CCRA) networks, as evidenced by the LOG data captured over this period. It is important to note that the log data by no means captures all of the city-to-city interactions resulting from network activity, but it gives a good indication of where most activity is focused.

In March 2015 Johannesburg hosted a regional workshop on emissions measurement and reporting for C40 cities in Africa. It has also played a strong role in piloting a methodology for GHG inventories - the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC). Furthermore, Johannesburg issued an innovative green bond in 2014 and won the C40 Cities Awards 2015.

Johannesburg has a single unit which acts as the C40 anchor for the entire city and plays a coordinating role. The office is responsible for policy-related matters which drive the climate change agenda. This means that administrative, technical and programme level direction is from this office. There is also a sustainability champion in the Mayor’s office.

The unit is comprised of six directorates (four are sector based) responsible for water, waste, biodiversity, air quality, climate change and energy, cross-cutting environment. An infrastructure unit was established after the last elections. Transport department and planning department are within a different unit, but the single unit plays a coordinating function. Each network has a Member of staff responsible for leading the city interactions with that network.

2 The LOG data includes all types of interactions, including calls, conference calls, meetings (informal, formal, face-to-face, email exchange, peer exchange, webinar, workshop.
CONTRIBUTION OF C40 SUPPORT TO CLIMATE ACTION

Overall Johannesburg recognises two main advantages of participation in the C40 network. Firstly, as a resource to support the city climate actions: city staff frequently mentioned that having **access to a colleague who sits in another city in a similar position is a valuable knowledge resource** and also allows you to speak with more confidence when implementing actions in your own city. Secondly, C40 membership was described as a **catalyst for climate action** in itself, encouraging cities to take action, and providing a platform for them to demonstrate their commitment.

Selected examples of how C40 has made a contribution towards the cities expected outcomes are described below.

**Successful expansion of the BRT**

According to C40 city reporting, Johannesburg engaged in the BRT network with the aim of delivering the next phases of the Rea Vaya BRT system\(^3\), specifically improving the financial sustainability of the BRT, through reducing costs as well as attracting more users to the BRT.\(^4\) At a 2013 BRT workshop in Jakarta the workshop and in follow-up events Johannesburg was able to **learn and share technical expertise around the bus route infrastructure**. Johannesburg noted that a follow-up webinar, organised around the issue of ‘low-flow high flow’ infrastructure, was useful to understand from another city with similar challenges (Rio) that the intended infrastructure approach was feasible.

Figure 2 Specific C40 contribution – expansion of the BRT

Johannesburg also gained useful knowledge from a BRT webinar in Rio, which addressed the issue of how to communicate to stakeholders (e.g. the public). In collaboration with EMBARQ\(^5\) network, Johannesburg reported to have doubled their passenger numbers on the BRT. According to the BRT network lead, Johannesburg compares very well with a number of other cities in the network e.g. Santiago and other Latin American cities in terms of challenges and characteristics such as population density, meaning that knowledge exchange is particularly valuable between these cities. The C40 network manager was reported to have played a valuable facilitating role by encouraging further independent interaction between cities. "**The key to C40 success is a willingness to bring people together and to share information. Johannesburg has benefitted from that. The way it operates is very good, the people are passionate.**" BRT Network lead.

**Developing emissions measurement and reporting systems**

C40 was reported to have provided strong contributions in terms of tools and frameworks to help frame climate action in the city. Johannesburg was the first African C40 City to use the **Global Protocol for Community-scale Greenhouse Gas Emissions (GPC)** to estimate its emissions, and

---

\(^3\) Johannesburg took a decision in November 2006 to plan and build a BRT system called Rea Vaya.  

\(^4\) Deliver the next phases of BRT expansion in a high-quality manner with citizen and operator support, with the BRT moving 200,000 passengers per average week-day by 2018 across a total of 86.9km of BRT corridors.

\(^5\) An initiative from the World Resources Institute (WRI), EMBARQ operates through a global network of centres in Brazil, China, India, Mexico, Turkey and the Andean region. The EMBARQ network collaborates with local and national authorities, businesses, academics and civil society to reduce pollution, improve public health, and create safe, accessible and attractive urban public spaces and integrated transport systems.
in partnership with CDP, the city hosted a workshop on emissions measurement and reporting for all C40 cities in Africa.

Johannesburg reported that participation in this pilot action was very beneficial for the city by ensuring they could establish systems that work for them. The GPC methodology was used for the first time during the process of developing the climate change strategy framework, and helped the city articulate the process as to how they got to that point of developing the climate strategy.

**Figure 3 Illustration of specific C40 contribution - tools to support climate action and reporting**

Johannesburg identified the benefits of being able to document the process of climate action. For example, the **Compact of Mayors** initiative gave a framework that helped Johannesburg to implement climate action in a transparent, focused way. Johannesburg was therefore able to document all the steps they have taken to produce a clear climate strategy, and have used this to demonstrate the climate action they are taking. Based on their experience, Johannesburg were keen to share how they overcome challenges, and underlined that their experience became an opportunity to extend that learning to other cities in the network.

**Improving waste management**

Johannesburg's waste management challenges are similar to some Latin American and East Asian C40 cities (e.g. there are similarities in socio-economic level). Johannesburg goals in the C40 SWSS network included improving participation of informal workers in recycling. According to the C40 reporting, participation in the network allowed Johannesburg to learn about approaches in cities like Rio and Delhi and as a result the city has started to upgrade its community program support, including business development capacity building for community workers and lease programs for processing equipment to produce high quality raw materials from waste.

The SWSS network contact pointed out that there many useful examples to be found in European cities in terms of technology, (e.g. alternative technologies for waste disposal), as long as you are clear on what you are looking for. "[C40] provides an opportunity to learn, and to take a little bit of what works in different contexts" SWSS contact point. For instance, if Johannesburg were starting a new project in Africa, the technology might have been in use already, and the city would be able to understand how other cities have dealt with similar challenges. In this respect direct city-to-city engagement was identified as useful, on a one-on-one basis, allowing more, better quality learning.

While there is a lot of information sharing in the network, and the learning part was reported to be very strong (e.g. how other cities structure their policies and legislation, planning tools etc.), it was suggested that accountability on progress could be improved at the individual network level. This could be achieved by ensuring proper follow-up on progress from the previous year, and further active C40 involvement to facilitate this process was suggested.

**Key factors**

- In Johannesburg, C40 has been used as a tool not only to access key knowledge for project implementation, but also as a tool to help the city define their strategy and actions. One key factor in C40’s success was the strong backing of climate action by the mayor and who had strong involvement in C40 initiatives.

- Technical officials underlined the need for coherence between the goals defined in the political

---

6 The workshop focused on building cities’ capacity to measure greenhouse gas (GHG) emissions, develop climate action plans, and collect and report on climate data.
7 Launched at the 2014 United Nations Climate Summit, the Compact of Mayors is a global coalition of mayors and city officials pledging to reduce local greenhouse gas emissions, enhance resilience to climate change, and track their progress transparently. It is an initiative between global city networks Local Governments for Sustainability (ICLEI), C40 Cities Climate Leadership Group (C40) and United Cities and Local Governments (UCLG), with support from UN Habitat.
strategy and their translation into clear and feasible technical actions, with sufficient capacity ‘on the ground’ to implement the actions. A role for C40/Compact of mayors was suggested in this respect, to ensure that there were sufficient resources committed when plans are made at the political level.

- City staff noted the benefit of hosting the C40 regional office for Africa and being a steering committee Member, which has allowed to maximise the benefit of C40. For example, in terms of reporting an measurement, they are now the pioneering city in Africa to implement the GHG inventory.

- The C40 webinars and workshops were reported to bring clear benefits to city staff as they were able to interact with colleagues from other cities who have practical experience and knowledge “being able to learn from people who have actually implemented something is valuable”. BRT network lead.

- The practical approach of C40 in terms of network interactions and content exchanged was highlighted. For example in the transport sector, it was noted that while there were other networks or knowledge sources available with knowledge on BRT (such as UITP - French Union of International Public Transport) they were more academic or focused on specific aspects such as bus contracting, and could not offer the same content as C40.

**SUGGESTIONS FOR IMPROVEMENT**

- A need for **learning between networks** was identified by at least two city officials. It was considered that while there was useful learning going on within the networks, they had little knowledge exchange between the networks. A feedback mechanism between networks was suggested as a solution, or for example a technical summit between networks, alongside the Summit of Mayors, in order to promote such horizontal exchange.

- There was a call for **increased accountability at network level** on progress made by the Member cities. A number of staff thought a more systematic follow-up process on how city challenges have been addressed would be beneficial for all member cities.

- **C40 organised interactions** were welcomed by city staff. One improvement suggested (from the BRT network contact) was to have a C40 seminar every year, rather than every two years (but recognised budgetary constraints in this respect).
SOURCES

Interviews
- Lebo Molefe, Director for Air Quality, Climate Change and Energy
- Khosi Baker, Director, Waste Management and Regulation (contact for SWSS network)
- Jeff Ngcobo, Rea Vaya, Operations Manager (contact for BRT network)
- Hastings Chikoko, C40 Regional Director for Africa
- Zarina Moolla, C40 Project Manager, Mitigation Goals and Emissions Accounting Standards

C40 data
- C40 Network Outcomes Impact Reports (NOIR) Q1 2016
- Data collected for the Climate Action in Megacities report, http://cam3.c40.org/#/main/home

Other
- Johannesburg Integrated Development Plan (IDP)
- Bus Rapid Transit Case Studies from Around the World, World Resources Institute, EMBARQ
- Climate Risk and Adaptation Framework and Taxonomy (CRAFT) information sheet
- Strategic Integrated Transport Plan Framework for the city of Joburg
ADDIS ABBABA, ETHIOPIA

| Population (metro) | 3.2mn |
| Mayor             | Diriba Kuma |
| GDP (US$)         | 4bn |
| Climate           | Humid Moderate; Dry Winter |
| CO2 Target        | 75% reduction by 2020 compared with 2010 |

OVERVIEW

Addis Ababa is currently a member of five C40 networks, with a key focus on transport and transit-oriented development and waste. According to data collected by C40, Addis Ababa is currently implementing or planning to implement 9 actions with C40 support. In 2015 Addis Ababa hosted the first Transit Oriented Development (TOD) Network Workshop, bringing together 10 cities. A C40 city advisor currently sits in Addis, providing technical support related to the BRT system, as well as facilitating engagement with the C40 network.

C40 NETWORK MEMBERSHIP (2016)

- Bus Rapid Transit (BRT)
- Climate Change Risk Assessment (CCRA)
- Sustainable Solid Waste Systems (SSWS)
- Transit Oriented Development (TOD)
- Green Growth (GG)

CITY CLIMATE PRIORITIES

The Climate-Resilient Green Economy (CRGE) national strategy was developed in 2011 to protect the country from the adverse effects of climate change and to build a green economy. The strategy guides Addis’ climate action and follows a sectoral approach with initiatives designed to help Ethiopia reach ambitious growth targets by 2025, while keeping GHG emissions at a low level.

The city is currently finalising an integrated urban development plan for the next 10 years, with a focus on integrating transport networks with land use. In the process of developing the plan, the city drew on experience from Latin American and Asian C40 cities, for example to support the integration of the Bus Rapid Transport network with land use.

A new Sheger express bus system was launched in May 2016, and there are plans to introduce a Bus Rapid Transit (BRT) system. According to the Transport Programs Management Office, the BRT system is planned to be operational in 2018, with the detail design for the project planned to be completed in eight months and the construction to be launched in 2017. Another key transport project, the Addis Ababa Light Rail Transit (LRT) was opened in 2015. It is a 34 km two-line network serving 39 stations, becoming sub-Saharan Africa’s first light-rail system.

Addis climate goals relevant to C40 include:
- Deliver 16km pilot BRT corridor to a high standard – high quality technical specifications and deliver appropriate stakeholder engagement mechanisms to get public support and buy-in (BRT).
- Achieve compact and connected development - Addis Ababa is producing local development plans along the LRT and proposed BRT for transport oriented development and seeking to integrate land use and transport planning policies (TOD)
- Assess, measure and reduce risks related to Climate Change (CCRA)
CITY ENGAGEMENT IN C40

Addis joined C40 with a particular focus on developing knowledge and exchanging experience in the areas of waste management and transport. This is reflected in the levels of activity in networks Sustainable Solid Waste Systems (SWSS) and Bus Rapid Transit (BRT). In the area of waste management, one of the city’s top priorities is to reduce the amount of waste sent to landfill disposal by significantly increasing its composting infrastructure and recovery of recyclables.*

Feedback from staff in these sectors indicated that they looked to C40 particularly for experience and knowledge from the other Member cities, particularly in the implementation phase of projects.

Figure 4 Number of recorded C40 interactions with other cities, by network – Addis Ababa (Q42013-Q42015)

Addis hosted the first TOD workshop in Q1 2015, bringing together 10 cities (Addis Ababa, Buenos Aires, Cape Town, Jakarta, Johannesburg, Los Angeles, Moscow, Rio de Janeiro, Seoul and Tshwane). A range of key issues related to transit-oriented development were discussed over three days, including: public engagement and social equity; plans, policies and strategies for TOD; and implementation of TOD.9

One challenge identified was the quality of the internet connection speeds available, meaning that participation in online webinars was sometimes impossible or very difficult for Addis city staff.

A number of city staff discussed the need for technical capacity and knowledge to actually implement ongoing or planned projects in Addis Ababa. This is why having a C40 city advisor was welcomed by the city, and increasing C40 offering of technical support was assessed to be useful by the city.

* http://www.c40.org/blog_posts/waste-management-a-priority-for-c40-s-african-cities
Overall Addis engages with C40 on specific issues. Network contacts identified two key ways in which C40 contributed to climate action within a number of sectors. Firstly, C40 offers the opportunity to identify and understand the approaches other cities are taking on key issues, for example processes to engage stakeholders in the planning phase of the Bus Rapid Transit network. Secondly, the different perspective that C40 network offered was underlined, particularly in terms of technical solutions and implementation of projects. The presence of the city advisor was strongly welcomed in this respect.

According to the interviewed city officials, workshops clearly offer the most useful interaction method, permitting participants to understand and discuss solutions and foster good quality knowledge sharing, face-to-face interaction that is not so easy in other forms of interaction e.g. webinars.

Selected examples of how C40 has made a contribution towards the cities objectives are described below.

**Developing the technical specifications of the Bus Rapid Transit (BRT) network**

According to data collected by C40, through the BRT workshop in Jakarta (Q1 2014), the city of Addis Ababa learned from other cities’ experiences (in particular Buenos Aires and Johannesburg) and identified the ITDP BRT standards as a useful tool for planning their BRT network. This has helped the city develop a comprehensive, and better plan for their pilot corridor in terms of the technical specifications.

The Manager of the Transport Programs Office noted their useful experience at the following BRT workshop hosted in Buenos Aires (Q2 2015). "Workshops allow you to understand the concept very quickly and concretely. You can ask definite questions." Addis BRT network contact. However, one challenge noted was that the frequency of workshops is quite low, meaning that the professional ‘intimacy’ formed between colleagues can dissipate over this period, and maintaining effective communication can be difficult.

**Figure 5 C40 contribution towards the development of the pilot BRT corridor**

Sources: Ramboll interviews; C40 data; ICCT and UNEP, December 2012

C40 has also provided strong support in terms of stakeholder engagement for the BRT project. According to data collected by C40, through the C40 network the city of Addis Ababa used other cities’ BRT Stakeholder Engagement and Marketing Plans to help craft their own plans and develop funding proposals to be able to deliver this work.\(^{11}\)

In addition, a peer review process was run by the BRT network. The cities of Amman, Buenos Aires, Johannesburg and Tshwane attended the peer review, and allowed Addis Ababa to confirm the draft Plans they had created, to ensure the pilot BRT corridor (which was a new concept for Addis Ababa) will be delivered with public and stakeholder support. The role of the C40 city advisor was assessed to be instrumental in ensuring useful follow-up after the BRT workshop. The city advisor was able to facilitate contact with the C40 network, and it was considered that without this role, the levels of communication maintained with C40 would have been much lower. It was also noted that finding a company to deliver the BRT system was easier because of the C40 network.

The BRT network lead for Addis (Manager of the Transport Programs Office) underlined that while the basic model of networking is good, the variation in city needs and priorities must be taken into account. For Addis, it was indicated that this had made it challenging to follow the networking agenda.

---

\(^{10}\) Participating cities included Addis Ababa, Buenos Aires, Jakarta, Johannesburg, Rio de Janeiro, Salvador, Santiago, Tshwane.

\(^{11}\) C40 Noir Data BRT
In this respect, the network lead highlighted the need to ensure the networking is driven by city needs (‘what do you need?’, rather than ‘Do you have something to share?’).

It was suggested that the process to ensure city needs are fully understood could be further developed by C40, ensuring that each city is asked what it needs in terms of engaging with the C40 network. As the cities are at different points of development, it was suggested that this would help to group cities who have similar interests and needs.

**Developing and implementing an integrated urban master plan**

The contribution of the C40 Transit Oriented Development (TOD) network was also assessed. Such development was reported to be a pressing issue in Addis, with previously unconnected planning for transport and land use. One example given was that over the last 15 years many houses had been constructed outside of the city centre, with little consideration of the impact on traffic congestion this would have on key busy routes in the city.

An integrated urban development master plan was developed by the Addis urban planning department in order to address these issues and ensure that transport planning and land-use planning are done in a holistic way. Before the urban plan, there were separate commercial areas, and housing areas, but the city is now proposing mixed use area along the key transport corridors.

According to the Director of the Urban Planning Institute, the plan drew on experience gained from the C40 workshops. For example, in order to ensure effective integration of 12 proposed BRT routes with land use, Addis drew on experience from Curitiba, Brazil as well as Asian cities regarding urban development linked to the transport lines, and the issues that these cities faced. "Implementation is much more challenging than planning, so getting experience from different countries is always useful." Director, Urban Planning Institute, Addis.

At a **C40 TOD webinar**, Addis reported to have gained some concrete knowledge, and also shared experiences on the preparation of the Master Plan. However, because of timing issues, it was reported to be difficult for the department to attend all of them. The importance of having documentation and presentations to share before and after webinars was also highlighted.

The city was more active in sharing their own experiences and exchanging information during **C40 workshops** organised specifically in this area. For example, city transport staff described how Addis were inspired by examples from Buenos Aires on how to involve stakeholders (e.g. the public) in different planning processes.

The format of the workshop was assessed as being the best way to exchange ideas and information with arrange of different cities. While some of this information reportedly could have been gained from the internet, the face to face discussion and visits facilitated by C40 was deemed to be much more useful. "After the C40 experience, it is clearer and easier to share ideas. Because of the C40 workshop, we get a chance to get ideas from different people. Seeing is believing." Director, Urban Planning Institute.

The Director of urban planning unit raised the issue of further study visits hosted by C40. In his view, C40 currently lacks this, although such visits provide important opportunities for tangible learning and connections. The fact that other environmental networks provide study tours and city visits was highlighted, while the focus of the C40 TOD network remained strongly on workshops.

**Key factors**

- City staff underlined the need for proper preparation of webinars to fully maximise their effectiveness. Sufficient documentation shared before and after webinars allowed useful exchange between colleagues in different cities.

- Face-to-face interaction at workshops was assessed to be particularly useful, and in the area of transport-oriented development there was a desire for C40 to organise further study visits, which, according to city staff, provide key opportunities for learning and exchange.
• City staff indicated that personal contacts and good relationships formed at the workshops were important for the quality exchange of information. The good atmosphere was important for fostering trusting relationships and further exchange.

One example given in the transport area of another successful network was the Bloomberg Initiative for Global Road Safety 2015 – 2019. According to the transport contact in Addis, this initiative has many partners, providing expertise on road safety, road design and other technical aspects. As well as offering feedback on the projects they have, the initiative also reportedly offer continuous trainings that are very relevant. Although it should be acknowledged that it is a different model, the technical expertise and assistance contributed by this initiative were seen to be useful.

The use of study visits in this respect was raised – city officials found it very useful to see a visual demonstration/site visit of a project to fully understand it. It was also highlighted that the Global Road Safety Initiative also organize a meeting among the cities every six months to understand what they have achieved. This means that the work done is on a practical level with a focus on Addis projects, and not simply following what the other cities are doing.

One issue highlighted by city staff was that while C40 provided useful learning experiences, the capacity to implement the solutions in Addis and the necessary knowledge was sometimes lacking. It was explained that the AFD and the World Bank are also supporting in terms of providing consultants for the Addis master plan development. Another example was in the area of transport, where the lack of transport planners was highlighted, and Addis discussed their intention to raise this with the transport-relevant networks. In general the need for capacity building and the knowledge to implement projects was highlighted.

A clear GHG emission reduction target related to the BRT system is included in data collected by C40. The implementation of the BRT system is expected to deliver CO2 emissions reduction between 400-600,000 tons per annum, depending on bus technology chosen (assuming 204 BRT buses in Addis Ababa by 2030)\(^\text{12}\) C40 clearly contributed to knowledge exchange on technical standards and stakeholder engagement processes to ensure a good quality pilot plan. However, there is not sufficient data to attribute a proportion of these expected emissions reductions to the C40 network. However, according to the city adviser, this provides C40 an opportunity to tangibly articulate their potential work and impact with the City on BRT system GHG emission reduction.

**SUGGESTIONS FOR IMPROVEMENT**

• **Ensure source material for webinars and presentations is shared** City staff highlighted how the webinar presentations and documentation shared often refer to different sources. Access to the source reference material is challenging in Addis and would therefore be extremely valuable. A number of options could be explored (e.g. shared on the internet, by email). For example, one option suggested was an archive of key BRT documents. This would involve developing an online and hard copy (for some documents) archive of key documents about the BRT development process including one pagers outlining key issues (i.e. bus technology options, automated fare collection payment methods, CDM development, public engagement etc.)

• **Further sharpen the network focus on city needs** One city staff member (active in the BRT network) suggested that the process to identify city needs could be further developed, and that work should be done to ensure the agenda is truly needs driven, rather than based on whether cities have something to share. One example of this is the CDM Registration Information Sharing process: Based on Addis-Ababa’s request, C40 planned to collect information regarding the realities behind the BRT’s CDM registration process including transcripts from calls with other cities and to invite a CDP expert to speak with key cities including Addis-Ababa.

• **Ensure existing cities are well-matched and have high quality exchange before any**

\(^{12}\) Source: Cost and benefits of clean technologies for BRT; ICCT and UNEP, December 2012
City staff highlighted the need to make sure exiting connections are working well before any expansion of networks. It was suggested that the best way is to start with regional connections. It was underlined that the quality of exchange could depend on the city-to-city relationship which should be nurtured. As a tangible example of action on this front, and based on Addis-Ababa’s request, C40 were planning at the time of the evaluation to help facilitate and fund the participation of two city officials on a three city BRT study Tour to India on which will include a high level delegation of 9 participants including the Deputy Mayor and Heads of key transport and related sectors (planned to take place during October 2016).

**SOURCES**

**Interviews**
- Dr Solomon Kidane Zegeye, General Manager, Transport Programs Management Office (TPMO)
- Ato Abebaw Sentie, Director, Addis Ababa Urban Planning Institute
- Gifti Nadi, C40 city advisor, Addis
- Hastings Chikoko, C40 Regional Director for Africa

**C40 data**
- C40 Network Outcomes Impact Reports (NOIR) Q1 2016
- Data collected for the Climate Action in Megacities report, [http://cam3.c40.org/#/main/home](http://cam3.c40.org/#/main/home)

**Other**
- [https://www.gfdr.org/sites/default/files/publication/Addis_Ababa_Resilient_cities_program.pdf](https://www.gfdr.org/sites/default/files/publication/Addis_Ababa_Resilient_cities_program.pdf)
- [http://www.undp.org/content/dam/ethiopia/docs/Ethiopia%20CRGE.pdf](http://www.undp.org/content/dam/ethiopia/docs/Ethiopia%20CRGE.pdf)
## TSHWANE, SOUTH AFRICA

<table>
<thead>
<tr>
<th>Population (metro)</th>
<th>3.2mn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayor</td>
<td>Solly Msimanga (2016)</td>
</tr>
<tr>
<td>GDP (US$)</td>
<td>50 bn</td>
</tr>
<tr>
<td>Climate</td>
<td>Humid Moderate; Dry Winter</td>
</tr>
<tr>
<td>CO2 Target</td>
<td>-</td>
</tr>
</tbody>
</table>

### OVERVIEW

Tshwane joined C40 in 2014 as an innovator city and has since then been an active Member in a number of networks. According to data collected by C40 (NOIR data), Tshwane has engaged in 9 actions supported by the C40 network. The data from the CAM data (Climate Action in Megacities) shows that Tshwane has engaged in 6 actions, 5 of which were facilitated by exchanges with cities within the C40 network. As an innovator city, Tshwane also positions itself as an innovation hub host to many research institutes. Some current initiatives include 100% CNG buses for the Bus Rapid Transit (BRT) systems, a small fleet of electric cars and free city Wifi. Tshwane has strong mayoral engagement in the C40 network.

### C40 NETWORK MEMBERSHIP (2016)

- Bus Rapid Transit (BRT)
- Climate Change Risk Assessment (CCRA)
- Green Growth (GG)
- Municipal Building Efficiency (MBE)
- Sustainable Infrastructure Finance (SIF)
- Transit Oriented Development (TOD)

### CITY CLIMATE PRIORITIES

The Tshwane Vision 2055 is the city’s long term development plan and serves as the point of reference for the city’s interventions, priorities and strategic actions over this time period, including climate-related action. The six outcomes are aimed at significantly reducing the carbon load and ecological footprint while generating employment opportunities and stimulating new industries. The plan includes a number of relevant climate actions – for example the roll-out of the Tshwane Bus Rapid Transit.

Tshwane key climate action goals relevant to C40 include:

- Develop and deliver a high-quality BRT system: Deliver improvements to the current BRT corridor through optimising the Operational Plan (BRT).
- Assessing, measuring and reducing risks related to Climate Change: Design and implement a disaster management plan tailored to tackle city's vulnerabilities (CCRA).
- Grow the green economy: Receive feedback from other cities on their "Green Economy Framework"; learn about innovative financing models for green projects; establish funding for construction of a cleantech hub in Tshwane (GG)
- Extend efforts for improving energy efficiency in municipal buildings, including improving data collection and identifying finance (MBE).
- Achieve compact and connected development: Tshwane is undertaking a reconceptualisation project for the Mamelodi Urban Core programme and wants to develop ways to attract private sector to invest and build out this area (TOD).
CITY ENGAGEMENT IN C40

Tshwane joined C40 in 2014 as part of an effort to make sure that the climate actions implemented by the city were benchmarked, relevant, and informed by best practices. One advantage of C40 underlined by city staff was the ability to benchmark with other capital cities from around the world. According to staff from the sustainability unit, the selection of C40 networks targeted for engagement is based on the city priorities and programmes. They look at key focal points in the city, and then allocate key individuals already active in that space. Tshwane is in a relatively high number of networks – some led by city staff from key service departments – the enthusiasm of these colleagues was noted as one factor which permitted this strong engagement.

Staff responsible for C40 perceived there to be good visibility of C40 within the city. For example, C40 is well-identified on emails, letterheads, stemming from a commitment from the administration themselves. This is likely also due to the work of the city sustainability unit to promote the network. With an imminent change in Mayor, the city sustainability unit plan to go on a ‘roadshow’ to widen the exposure of C40 within the city. Staff indicated that this would allow them to engage with individual departments and link their work with the broader climate change response.

C40 is perceived by city staff as a platform for mayors, as well as technical staff – a dual relationship which is seen as key to the network’s success. The role of C40 was highlighted in facilitating Mayors’ work on gaining commitment for key climate projects. C40 as a platform for these key decision-makers, giving visibility and a space to share projects and commitments e.g. clean-bus declaration, renewable energy expansion.

Figure 6 Number of recorded C40 interactions with other cities, by network – Tshwane (Q42014-Q42015)

In Tshwane, it was recognised that the levels of engagement in the networks varies, partly because of staff availability and resources. It was suggested that a ‘buddy system’ could help in this respect. Engagement with the CCRA network was given as an example where there are 2 or 3 colleagues, one of which should be able to attend an event or a meeting at any given time. The city recognised the need to ensure sufficient resources were mobilised to engage with a network, and ensure that it is properly linked to a number of key departments/staff.

A city sustainability unit established in 2013 with 11 employees lead the city engagement with C40. According to them, this gives higher political momentum and support to the sustainability agenda. The unit has a direct reporting line to the mayor. In their view they act as catalysts for climate action, working closely with functional departments. They design and implement programmes, to hand over to departments for implementation.

It was noted that the current mayor prioritised sustainability and in order to speed up implementation of the sustainability agenda he made the decision to establish the unit in his office. This structure appears to have maximized C40’s visibility and therefore potential impact within the city, by having a specific sustainability profile to lead C40 engagement and ensure involvement in international forums.
CONTRIBUTION OF C40 SUPPORT TO CLIMATE ACTION

Tshwane highlighted the benefits of C40 as a platform for mayors as well as for technical staff, and saw this dual relationship as key to the success of the network. At the mayoral level events and activities, the benefits of visibility of the city within the network of climate actors and decision-makers was highlighted as an advantage, allowing mayoral profiles to be enhanced within the climate change space. The benefits at the technical level were seen to stem in part from having small and interactive network sessions. Knowledge exchange such as access to particular cities and plans was seen as being very different from attending conferences, and much more effective in terms of learning outcomes.

Tshwane has to date reported six city climate actions in the Climate Action in Megacities (CAM) database, in a variety of sectors such as buildings, energy supply and waste. Four of the actions were reported to be have been most helped by working with other C40 cities, and one project in particular (Recyclables and organic separation from other waste) reported to have been supported by cities within a specific C40 network. Selected examples of how C40 has made a contribution towards the cities expected outcomes are described below.

Improving the Bus Rapid Transit (BRT) operational plan

Within the C40 Bus Rapid Transit (BRT) network Tshwane joined with the goal of developing and delivering a high-quality BRT system, in particular to deliver improvements to the BRT operational plan for the pilot corridor. According to C40 data, among other network activity, a call was held with the city of Rio de Janeiro, during which Tshwane representatives learnt about key improvements to feed into the operational plan.

The BRT contact point in Tshwane, highlighted how the C40 platform is useful to contact different people and different cities, offering a source of assistance without an additional cost. “C40 allows you to bounce ideas off other cities. Technology like WhatsApp also helps this exchange meaning we can easily share experiences and solve problems”. BRT network coordinator, Tshwane.

In this respect it was highlighted that the network activity doesn’t always go through C40. The BRT colleagues frequently use a social network group (WhatsApp), and reported that when they have something to discuss, they have a webinar. The Tshwane network coordinator also highlighted how they were encouraged by C40 to prepare in advance for meetings. C40 BRT networks leaders asked them to specify their challenges this year, to ensure effective information is exchanged when the meeting takes place. Information and documents to be exchanged were made accessible on the C40 website, and this was noted as one useful platform for information exchange.

Transit-oriented development (TOD)

Tshwane is active in the TOD network with a current focus on developing ways to attract private sector investment in a specific redevelopment project (C40 data). In Tshwane’s view, the funding perspective was key when thinking about transport-oriented development in practice. For this reason they felt the network had thus far ‘ticked the boxes’ in terms of what they wanted to achieve as a city. The coordinator also described how as a city they felt they were on a par with other cities from a strategy and policy perspective.

The workshops were identified as a useful method of interaction by the city, noting that the TOD network organised workshops both last year (2015) and this year (2016). The Tshwane coordinator described how it was easy to become active in the conversations, over and above the presentations at the workshop. They felt that the number of webinars was probably appropriate but that the value of workshops should not be underestimated, and that it was important to be able to establish a rapport so you are able to engage your colleagues on a one-to one level (within a workshop).

In particular, to deal with issues of: (i) feeder buses running empty and (ii) difference between forecast and actual passenger numbers, particularly in the off-peak.
The level of information exchange during a workshop was reported to be intense, the coordinator explained how it was necessary to cram the information exchange within a few days. The huge preparatory work necessary for this was underlined. It was suggested that further work was needed on the city side to understand what it takes to manage a network.

The Tshwane network coordinator underlined how all the participating cities in this network produced an action plan, outlining the key areas of intervention. “Having tangible action plans from the cities on how you will be engaging in the network is very useful.” Tshwane TOD coordinator. However a number of city staff felt that a rethinking of how these networks are reported was needed. The role of BRT as a key part of TOD and mobility was discussed. It was therefore suggested that a brainstorm on the value chain of mobility was needed in order to ensure the network structure fully reflected current needs. One suggestion was put forward of having a broad mobility network with sub-networks (land-use, transport etc.).

Key factors

- The trust relationships built between colleagues from different cities participating in networks was identified as a key success factor for C40. City staff described how this ensured the solidity of the network and facilitated information exchange.

- City officials expressed an aim to mobilise more of their officials and colleagues to engage in the network. One network lead described how they had not been able to attend each webinar, but someone from the team was always able to attend. “It helps to have a back-up in the city, to ensure that network activities can continue even when one contact is not available.”

- Building the capacity in the city itself to be able to make full use of C40 was also discussed as an important factor. For example, to make full use of webinars, city staff described how they share the content of the webinar in a meeting room with colleagues. This was particularly relevant in some sectors where the colleagues may be more fragmented within the city organisational structure. This further dissemination action was seen as important, because participation in C40 is not necessarily part of their job description.

- It was generally thought that C40 could do very little to mitigate the risk of change in city political leadership (change of mayor). However, it was though that initiatives to ensure that sustainability issues are kept high on the agenda could help. For example, former mayors (alumni) group of elders might play a role in orienting the new mayors in place, playing an advisory role and ensuring C40 remains on the agenda.

- C40 was seen as quick, well-organised, good at advocacy which distinguishes it from other networks. For example C40 membership is free and open, whereas ICLEI is membership fee based. The financial support provided by C40 to help cities participate in network meetings, webinars etc. was considered unique in that it allows the city to access information that they wouldn’t otherwise get. C40 staff were also seen as a positive point and it was highlighted that the C40 Regional Director was extremely efficient to work with.

- From the global perspective Tshwane, Cape Town and Joburg have been strengthening their engagement in networks. African Cities Network, support C40 involvement as this strengthens the knowledge sharing processes, but also the monitoring and reporting that they engage in. Tshwane also recently played host to the Second African Capital Cities Sustainability Forum (ACCSF), a platform for mayors and senior city officials to discuss and spearhead sustainability in their cities.

- The shared guidelines set by C40 were also identified as a distinguishing factor by one city staff member. The Memorandum of Understanding includes expectations for reporting and participation in networks, and from the city point of view C40 requires more of an ongoing structured form of sharing, with expert network leaders available; this level of resource was not seen to be present in a similar network ICLEI (and neither are there similar MoU or participation standards). The material support offered by C40 (e.g. assistance for the costs of accommodation, travel to attend workshops etc.) was also highlighted as a unique advantage of C40.
Impacts of city climate actions (such as expected GHG emission reductions) were not discussed in detail, and for this reason little data is available from the field work on the longer term impacts of C40 contribution. Like many of the selected cities, the data collected by C40 (NOIR data) on Tshwane actions and goals within the networks also contains few GHG emission reduction targets.

Tshwane considered that the current carbon footprint methodology currently in use is suited to their needs, because they can disaggregate to the city level vs the community emissions, facilitating agreement on demonstration projects. It was discussed that in its current format GPC does not distinguish the direct emissions by the city (it rather takes into account all emissions) leading to a dual reporting burden. However, the city reported to be closely following GPC developments in order to be able to find common advantage when possible.

**SUGGESTIONS FOR IMPROVEMENT**

A number of staff highlighted a lack of reporting at the network level. It was seen as important for the cities within networks to be able to hold each other accountable and provide some progress reports, and critical feedback etc. The possibility of further streamlining and integrating reporting functions (not just C40 requirements) was also discussed, as they were considered to be cumbersome and time-consuming by a number of staff (i.e. CDP and CARBON with ICLEI, Compact of Mayors).

In terms of financing climate action, it was acknowledged that C40 are not expected to fund projects, but further support in identifying and accessing funds was welcomed. City staff explained that usually it very difficult to access these funds through national governments. This kind of technical assistance would be considered useful by the city, including resources to help link the city link climate action to investors.

Some city staff highlighted a need to further examine the value chain of sector activities, to inform the possible integration of some network topics. The example was given of how Bus Rapid Transit (BRT) was a key part of Transit-oriented development (TOD) and the two topics could not easily be separated. It was suggested that an analysis of the complete value chain could be done in order to redefine a problem statement, and develop the network strategy to respond. This also led to a discussion on where the optimum focus of the network was, at a technical or strategic level.

Policy staff suggested that C40 influence at UNFCCC negotiations could be improved, as this is where the major decisions on climate change are taken. An example was given of ICLEI which has a seat at negotiations for local governments, and was therefore able to influence a number of tracks and shape negotiations. While C40 was a strong catalyst for action, it was considered that it could further find its feet in the global climate space. It was suggested that there was potential for a specific network in this respect.
SOURCES

Interviews
- Ms Dorah Nteo, Chief Sustainability Specialist and Acting Chief of Staff in the Office of the Executive Mayor – Green Growth Network and the City’s Lead C40 contact for policy making
- Ms Pumza Letsoalo, Acting Executive Director: City Planning – Transit Oriented Development Network
- Ms Imelda Matlawe, Acting Executive Project Manager: IRPTN Specialised Unit – Bus Rapid Transit Network
- Mr Sello Mphaga, Director: Climate Mitigation Programmes – Low-emission Vehicles Network and coordinator for City’s C40 engagements and reporting
- Ms Dolly Mafa, Director: Sustainability Finance Mechanisms - Sustainable Infrastructure Finance Network
- Ms Lutske Newton, Acting Director: Climate Adaptation and Resilience - Climate Change Risk Assessment Network
- Ms Henriette Koch, Deputy Director: Capital Investment Planning - Land Use Planning Network

C40 data
- C40 Network Outcomes Impact Reports (NOIR) Q1 2016
- Data collected for the Climate Action in Megacities report, http://cam3.c40.org/#/main/home

Other
SHENZHEN, CHINA

<table>
<thead>
<tr>
<th>Population (metro area)</th>
<th>10.8 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayor</td>
<td>Xu Qin (re-elected in 2010)</td>
</tr>
<tr>
<td>GDP (US$)</td>
<td>363 bn</td>
</tr>
<tr>
<td>Climate</td>
<td>Humid Moderate; Dry Winter</td>
</tr>
<tr>
<td>CO2 Target</td>
<td>Reduce emissions intensity (per unit of GDP) by 21 % between 2010 and 2015.</td>
</tr>
</tbody>
</table>

OVERVIEW

Shenzhen (SZ) became a member of C40 in 2014, and is the first Chinese city to be awarded a C40 city advisor. The city advisor is appointed to work with the city to implement a programme on Low Emission Vehicles – to integrate the transportation sector into mobility (integrate a mobile app into the carbon trading system), and research on the GPC and carbon emission inventory for SZ.

SZ is implementing 2 actions within the C40 networks:

(i) Introduce policies to improve engagement with buildings owners
(ii) Increase the number of buildings that report building energy performance data

The city of SZ has been active in a number of climate action areas, particularly in the areas of Transportation and Building Efficiency, where they have participated in webinars and been in charge of workshop and forum. Two years ago (in 2014) they won the C40 transportation award.

CITY CLIMATE PRIORITIES

Unique to China, Five-Year Plans (FYPs) are blueprints that central, state and local governments draft and implement to guide social and economic development. Since 1995, the national government has focused on energy efficiency in buildings in its FYPs, and sub-national governments have followed suit since 2000. Since then, many cities have released Building Energy Efficiency action plans as a sub-component of their FYPs – which is also the case in Shenzhen – including focus on transportation.

SZ is a close neighbour to Hong Kong and has like HK a lot of tertiary industry, and the city’s industrial orientation is more service oriented (city officials compared SZ with Silicon Valley in the US). Today transportation accounts for 40 % of emissions (cars 26 % (public and private)) and manufacturing 18 %. SZ has an ambition to become a low carbon city. This should partly be achieved through an ambition of 100 % electric public vehicles within the next 3 years – first through public transport (busses, subway, taxis, coach, and vans), later private cars – and partly through reductions in the building efficiency sectors.

In terms of public transport, the city of SZ works closely together with the Chinese company BYD (Build Your Dreams), the best-selling company in the world for electric cars, having its headquarters in SZ, to promote the low carbon agenda. SZ provides substantial subsidies in order to ensure electric busses are competitive to conventional busses. However, the Chinese government has announced

---

14 GPC = The Global Protocol for Community-Scale Greenhouse Gas Emission Inventories
that subsidies will decrease year by year. After 5-8 years the battery technology is expected to be more mature and costs may be lower. In addition, the markets get bigger and bigger and BYD envisions gaining more economies of scale, which may further improve the competitiveness.

SZ has engaged in the MBE and PRE networks in C40, which goes hand in hand with building efficiency, which is already being integrated and a high priority in the city, with SZ being the first city in China to settle on green parameters, such as maximum energy consumption per square meter of new constructions used for commercial purposes. Thus the city has required Green Building Standards for all new buildings to be constructed. Furthermore, SZ has its own local carbon emissions market, where enterprises either pay if emissions go up, or otherwise receive payments for savings. The baseline and performance is based on statistics and calculations. SZ is trying to build Energy Efficiency into its carbon emissions market, and is the first to include energy efficiency – with other cities still being at the industry level. The determination of the Energy Efficiency is based on an assessment of the emissions per square meter. The market price of carbon emissions depends on the local market. It has nothing to do with the international carbon emissions market.

Facts about Shenzhen Emissions Trading System
Shenzhen launched its Emissions Trading System (ETS) in 2013, following six other Chinese pilot cities. The total cap of seven pilot systems combined amounts to 1.24 billion tons, making China the second largest carbon market in the world, after the EU ETC.
The SZ ETS covers about 40 % of its total CO2 inventory. Its primary goals are to cap enterprise emissions and reduce CO2 intensity by 25 %.
The ETS includes 635 enterprises and 197 large buildings in 2013, of which 99.4 % of companies complied with their emissions reduction obligation.
By March 2016 total volume of the carbon market has reached 10.86 million tons and total value 409.54 million RMB.

Emission reduction achievements (from 2010 to 2014)
• 636 companies decreased their absolute amount of carbon emissions by 4.02 million tons, a drop of 12.6 %
• 621 manufacturing industries decreased emissions by 1.23 million tons, a drop of 8 %
• SZ reduced carbon intensity by 34.2 %, finishing mission set by “Twelfth Five-year Plan” – that is, reducing carbon intensity 21 % ahead of time.

SZ local carbon market
SZ is trying to build Energy Efficiency into its carbon market, and is the first to include energy efficiency. Other cities are still at the industry level. The determination of the Energy Efficiency is based on an assessment of the emissions per square meter.

CITY ENGAGEMENT IN C40
The city of Shenzhen started cooperating with C40 in 2013, where the deputy mayor participated in one of the UN meetings. Here he was introduced to C40 delegates, who afterwards visited SZ. In 2014, SZ became the first Chinese city to join C40.

Overall, the main driver for SZ to join C40 was to reduce carbon emissions. SZ is a relatively young city (30 years), which has gone through a rapid development. It is located in the south port of SZ, very close to Hong Kong and as such has an international strategic position and is generally open to new ideas and trends. In addition, it’s industrial composition (few big factories that oppose/less pressure) and the city’s current level of development allows SZ to consider the next step – reducing carbon emissions.
Based on the MOU signed between SZ and C40, the **main efforts** to reduce carbon emissions were to develop a carbon inventory, and reach the carbon emission peak through efforts primarily within Transport and Energy Efficiency. That being said, collaboration with C40 is now broader than these networks. Moreover, it was mentioned that an additional driver was the C40 network acting as a platform for global outreach. When SZ applied for the city award, their motivation was thus to get international attention, especially in the public transportation area, and to be a showcase for good practice.

**Figure 7 - Number of C40 interactions with other cities, by network – Shenzhen (Q3 2013- Q4 2015)**

Shenzhen has **participated in a number of C40 events** since it became a C40 member, particularly in the Private Building Efficiency network, which corresponds to the LOG data captured in the period, which gives a good indication of where most activity is focused. In addition to SZ focusing on Building Efficiency, it is also observed that the city has engaged in interactions in the Climate Positive (CP), now known as the Low-Carbon Districts (LCD) and SUD networks. While SZ is more active in energy efficiency, where they have their competitive (and biggest) potential, they also take part in other networks.

SZ participated in the award event in 2014, when they won the transportation award. Moreover, participation in 2015 on the low carbon cities forum and a workshop held in SZ where IBR was leading the building energy efficiency part. Furthermore, SZ is about to hold its first webinar on Building Efficiency.

Along with Shenzhen joining C40, they committed to being active and ambitious in terms of improving their carbon emission reduction programmes. As SZ was the first Chinese city to join C40 a careful approval procedure was undertaken, including a MOU expressing the forms and ways of collaboration, key sectors of emphasis, and commitment to annual events, at a minimum.

SZ pointed out that they are doing everything to adhere to their **commitments**, and are well aware of the **requirements for entering C40**, e.g. minimum part of two networks and yearly activity) and sustaining in the network, e.g. participate actively in C40 activities and events.

The **organisation** and cooperation with C40 in the city of SZ goes through its Regional Directors (of which two are based in Beijing). At the local level, SZ has chosen the Green&Low-Carbon Foundation (GF) as the C40 relations operator. SZ is the first Chinese city to have received a city advisor. The city advisor in SZ is based in the office of the GF, an NGO, which was considered an ideal candidate, as the GF already had a close relationship with C40. Basically, the city advisor works both for C40, GF and the Development and Reform Commission (DRC).

C40 is an organisational relationship of the city and the policy makers. The C40 relations are, primarily, with the DRC (= city government), but while DRC has no specific person to do the information exchange and to facilitate, this is taken care of by the city advisor, who is the liaison between C40 and the city. DRC is in charge of different sectors, e.g. transportation and carbon, and DRC involvement with C40 goes through the city advisor (who is also the only one with a good command of English – apart from staff in GF, where the city advisor is located).

---

15 Limitations in the Chinese legislation make it difficult for a city to hire a person, paid for by an international NGO. Foreign NGOs in China cannot employ people, and it is therefore necessary to outsource.

16 The first city advisor in SZ was received back in 2015, but was recently replaced by Ms. Tingyu He (Tina), who has been the C40 city advisor since April 2016

17 The GF focus and promote low carbon research (carbon pricing, etc.). They help enterprises in relation to standards and looks at lifecycle impact of low carbon vehicles or lifecycle low emission reduction in green technology. GF is dealing with government policy and tries to influence on government decisions by working together with government and stakeholders. 

18 The City Advisor was, formally, hired by the GF, who also pays her. The C40 will sponsor/ budget for the city and pays the compensation to the foundation. The reason for this set-up is that the City Advisor cannot get paid directly from a foreign NGO, as it is difficult in China to set up international organizations.
Two of the city stakeholders which are engaged in C40 through the city advisor are **BYD**, a Chinese manufacturer of electric vehicles, and **IBR**, a research institute focusing on energy efficiency in buildings and works towards including carbon emissions from buildings into the carbon trading system of the city of SZ.

BYD has participated in a number of C40 events, e.g. when SZ received its award in 2014, the low carbon cities forum in 2015 and the C40 cities award in Paris. For the low carbon cities forum, BYD cooperated with C40 and BYD invited key opinion leaders from other cities who are members of C40, e.g. Ken Livingstone, former mayor of London.

IBR did the data collection and responded to the Tokyo city-survey last year where a policy map was established on the basis of inputs from many C40 cities. IBR provided the required info on building efficiency policies. This included the Green buildings standards for all new buildings to be constructed. Further, a workshop was held in SZ, where IBR was leading the building efficiency part. IBR is also about to do a presentation of its experience at an upcoming webinar on building efficiency in SZ.

**CONTRIBUTION OF C40 SUPPORT TO CLIMATE ACTION**

The **main benefits** identified by the city advisor were **international experience, a platform for access to experts, research and policy changes, and branding of the city**.

In terms of access to experts, research and policy changes, the Green Foundation (GF) receive information on the technology and experience, which is very valuable. The City advisor mentioned that if you want to learn from the best, e.g. US and EU leaders in the field of low carbon, then C40 is the best network to be engaged in. Without C40 it is considered very hard to have direct access to government. C40 collects everything and can help establish connections with those more advanced cities, with the most advanced theories and methodologies.

C40 also has a lot of experts (e.g. carbon tax, municipal buildings), which is useful and valuable for the city as they can always consult with C40 to see if they have the needed expertise, which was mentioned being very efficient. A very direct contribution of C40 was reported to be the impact on the image of SZ all over the world including relationship building. One example was that of a workshop where there were 12 delegates from different cities, who now know SZ, their emission programmes, etc. This is now used to build relationships. The city awards have had the same influence.

Another advantage from C40 participation mentioned was that of **C40 resources such as tools and standards**, which has contributed to the potential carbon reductions in the longer term. In SZ specifically, the tools of C40 have helped the city with its carbon inventory. The GPC Inventory is a standard system that C40 wants to promote and SZ has just started launching this GPC mechanism. It was furthermore mentioned that joining C40 brought benefits which are generally not very immediate but rather step by step achievements, and that it takes time to form a new policy. Moreover, that C40 has had a positive impact on the promotion of electronic vehicles, although it is not considered possible to quantify these reductions. Below is outlined the two cases which were mentioned to be (further) spurred by C40 membership, but not only attributed by C40 membership.

**100 % electric vehicles in three years**

City officials of SZ mentioned that the ambition of all public transport using electric vehicles were partly an effect of the C40 award. While on the one hand, they emphasized that they could not say that the C40 award was the main drive for SZ's ambition, or that there is a cause and effect, as SZ was already in a very god position concerning public transportation. With the award, though, it was mentioned that it gave them faith and convinced them that it was possible.

**Emissions trading system**

SZ has integrated more than 600 enterprises in the emission trading system. This has not been a result of C40, but C40 has promoted the further development and had an assistive role. Furthermore, they have affected the level of ambition and inspirations in SZ.
Key factors
In addition to the above-mentioned benefits of joining C40, the following influencing factors were highlighted in SZ:

- **Joining C40 improved SZ’s relations/network to foreign and domestic cities.** The international forum and C40 supporting and facilitating contact to foreign persons like e.g. mayors (match-making). The international experience and knowledge sharing was the main benefit flagged by the city advisor. C40 helps create closeness between cities and smoothen the barriers.

- **The C40 standards** may increase the ambitions and the activities. It was mentioned by the city advisor that membership may have a positive influence on the city, as SZ see how other cities are doing and cities start competing as you want to do better. The example given here, again, was that of SZ integrating transportation into a carbon trading system. Here SZ has been inspired and borrowed ideas from the current system in Europe.

- **Last year in June, the Clean Bus Declaration was signed in London, including around 24 cities who committed by 2020 (or 2050) that they will fully or partly electrify their public transport.** BYD, who is an engaged C40 partner pointed out that C40 is a very good platform for manufacturers. This example gave BYD a chance to talk about future trend in busses, technology trends, reduction of costs and provision of better solutions.

City officials generally reported their satisfaction with the C40 network, relative to other networks. The city advisor mentioned that SZ collaborates with other cities and organisations like WWF and R20, but that C40 is definitely one of the most helpful organisations. C40 is considered very professional and delivering quality services and bringing great resources to SZ. BYD found C40 to be a good market place and helpful network (compared to others) – managing to gather the most effective group of companies, organizations, mayors, and other high-level city representatives. Overall C40 is described as a very effective and innovative platform where C40 staff always responds quickly. They are seen to focus on the high-level public sector, having a high and good working style as compared to many other international organisations that SZ cooperates with. Furthermore, C40 is perceived as providing advice on solutions at a detailed level – contrary to other networks or organizations, and generally considered to be very dedicated and efficient and have a spirit which SZ has not seen in similar organizations.

SZ has managed to reduce the amount of carbon emissions from companies and manufacturing industries, but the impacts achieved as a result of C40 involvement remain uncertain, as city officials mentioned that the influence of C40 is not so direct.

The short-term targets will be adjusted and increased each year, in line with the China Five Year Plan, which includes a section on Green Development: China aims at reducing emissions per unit of GPD by 40 percent by 2020 compared to 2005 levels; increase the share of non-fossil fuel energy to 15 percent by 2020 and ban commercial logging in natural forests.

SUGGESTIONS FOR IMPROVEMENT

- **SZ city officials mentioned that they would like C40 to have research,** within e.g. lifetime emissions, including manufacturing, as has been observed by Tesla in terms of research on lifetime emission of a car, starting from the manufacturer and considering the source of electricity. Today C40 is very focused on e.g. public transportation, and to a lesser extent the private market. BYD has a hope that C40 can start do research on private new energy cars (e.g. real lifetime emission costs).

- **C40 research methods** were pointed out as a suggested improvement area. IBR believes that C40 has the necessary expertise in the fields where they want to work. C40 ensures that experts are attached to the networks. However, if IBR needs expertise, they would probably at first contact other researchers from China. They believe that C40 makes use of very different research
methods. China is more focused on new technologies and on analysis of big data, and they believe that C40 has a different approach. This aspect was also mentioned by the city advisor, when asked as to whether C40 provides a platform for rapid best practice sharing. She said that normally they would go to universities, and that government will not go to an international organization/network like C40 for advice – for political reasons. The specificities in terms of what exactly needs to be improved remain unclear.

- Both the C40 city advisor, GF and BYD proposed that C40 becomes more open to the public in order to improve their awareness, and not only being dedicated to decision-makers/government in cities. In the future C40 could benefit from not only being a network connected to the government, but also the industry/enterprises and citizens, with the argument that carbon emissions savings involves all levels. Furthermore, BYD and GF mentioned that a lot of enterprises would like to join C40 to explore business opportunities and have a chance to present their development to the world. The city advisor further added that focus on citizens and the public, like e.g. WWF does, is advisable. The attention and awareness of the C40 should be increased. C40 can enlarge its impacts by increasing its public awareness, in the next 5-10 years. This would help provide even better results, reputation, influence and power, as the Chinese government at times might be reluctant to work with C40. C40 would be more powerful if citizens became aware of the network and increased awareness would also help facilitate collaboration between C40 and cities.

- The city advisor is now located at the GF. On the one side she mentioned that being located in an NGO is more flexible. However, on the other side, the position in an NGO, at GF, makes her position weaker compared to sitting next to Mr. Li, in DRC. If she was located at the city hall, she would have direct contact to the government and perhaps more power.

- From the point of view of the city advisor, the most efficient exchange form is to have a workshop and conference to gather people in one place; face-to-face, which is a more direct way. When you spend time with people you get familiar with them and their projects. This facilitates the collaboration afterwards. Also, one of the difficulties pointed out is that C40 has 89 member cities, for which time differences make it difficult to gather everyone, and SZ found it difficult at times to participate in webinars due to this time difference. It was suggested that C40 separates the cities in order to accommodate for the size of the group and potentially time differences.

- IBR has only been assisting SZ DRC in relation to C40 this far, but after some exchange of experience, and after C40 delegations to SZ, IBR welcomes and looks forward to closer collaboration with C40. IBR is very interested in the C40 contacts and cooperation, as they find the city network very comprehensive. Experience and knowledge sharing is something they really look forward to take part in. IBR in SZ is also part of the IBR Group, which has branches in Beijing and Chongqing, and further IBR relations to C40 may not only go through SZ in the future. IBR believes that there are potential benefits for all parties, the city, C40 and the IBR. Collaboration should therefore be based on expected future mutual benefits.

- The city advisor of SZ mentioned that the reporting requirements may at times be difficult. She is responsible for collecting the data, and C40 requirements vary and sometimes they request for general and other times very specific data (varies from different departments and methodologies used). If C40 wishes for a general figure, then the city advisor can accommodate that. However, before submitting these figures to C40, she has to validate this with the stakeholders. It was furthermore mentioned that the C40 requirements varies and for e.g. a city award, C40 must be provided with a methodology, preliminary figures, etc.
SOURCES

Interviews
- Li Angang, Division Chief of the Executive Office of Pearl River Delta Planning, SZ DRC, liag@sz.gov.cn
- Tingyu He (Tina), C40 City Advisor of Shenzhen, the@c40.org
- Leona Zhang, Senior PR Manager, BYD Branding & PR Division, Leona.zhang@byd.com
- Yu Han, Overseas manager of Shenzhen Institute of Building Research Co., Ltd
- Liu Zong Yuan, Assistant Director, Office of Board Registered Enterprise Legal Advisor
- Bella Liu (BL), bellaliu@gdfoundation.cn

C40 data
- C40 Network Outcomes Impact Reports (NOIR) Q1 2016

Other
- Shenzhen Emissions Trading System Introduction (forwarded by SZ C40 city advisor)
- The 13th Five Year Plan
RIO DE JANEIRO, BRAZIL

<table>
<thead>
<tr>
<th>Population (metro)</th>
<th>6,5 mn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayor</td>
<td>Eduardo Paes (2008)</td>
</tr>
<tr>
<td>GDP (US$)</td>
<td>94,2 bn</td>
</tr>
<tr>
<td>Climate</td>
<td>Tropical Wet &amp; Dry / Savanna</td>
</tr>
<tr>
<td>CO2 Target</td>
<td>20% reduction by 2020</td>
</tr>
</tbody>
</table>

OVERVIEW

The city of Rio de Janeiro holds a central role in C40, where Mayor Eduardo Paes has been the Chair since 2013. With the upcoming election this position is, however, about to change. Rio is currently a member of seven C40 networks. According to data collected by C40 (NOIR data), Rio is implementing 10 actions within the C40 networks. Rio has been active in a number of climate action areas, particularly in the sustainable solid waste network, where they are not only looking for sustainable waste management, but also in improving the collection fleet through e.g. hybrid waste trucks and new models for operation and financing. In 2015 Rio became the first global city to become fully compliant with the Compact of Mayors.

CITY CLIMATE PRIORITIES

In 2011, Rio passed its Municipal Policy on Climate Change and Sustainable Development. The plan sets out to reduction target of 20 pct. by 2020. However, in 2016, Rio published a new long term climate goal of 100 pct. GHG reduction by 2065: The Rio 500 vision. The city has also issued a resilience plan, as a part of the 100 Resilient Cities membership.

Rio’s climate goals relevant to C40 include:

- Develop mass transit systems (BRT and Metro)
- Reduce energy needs through e.g. efficiency in public lighting
- Reduce vulnerability to climate risks through improved planning and disaster management
- Move up hierarchy of waste management, lower GHG emission from reduced disposal amounts and organics management while incorporating informal recyclers

C40 NETWORK MEMBERSHIP (2016)

- Bus Rapid Transit (BRT)
- Climate Change Risk Assessment (CCRA)
- Cool Cities (CC)
- Private Building Efficiency
- Sustainable Solid Waste Systems (SSWS)
- Municipal Building Efficiency (MBE)
- Transit Oriented Development (TOD)

CITY ENGAGEMENT IN C40

Rio joined C40 in 2007 and has had a city advisor since. Rio has used C40 in order to establish a GHG inventory in 2011, which fed into the Municipal Climate Change Plan.

The city of Rio is facing challenges both from a climate point of view and from an internal urban point of view. The city sees C40 as a way to learn from other mega cities and urban leaders. Improving both the climate footprint and the quality of life for the citizens.
Over the period 2013-2015 Rio has been most active in the CCRA, the SSWS and the BRT networks as evidenced by the LOG data captured over this period. It is important to note that the log data by no means captures all of the city-to-city interactions resulting from network activity, but it gives a good indication of where most activity is focused.

Rio has had a city-advisor since 2007, and the local presence ensure constant interaction with C40. Rio also chairs the steering committee, and has hosted a summit in relation to the Rio+20 conference in 2012. The city has hosted several C40 delegations from other cities, and has been active in exchanges such as workshops.

One challenge for Rio is the language barrier. Many city officials are not trained in a sufficient level of English, which inhibits their participation. Also there is a restriction for city officials to travel, where among other the mayor cannot be abroad as much as could be needed from C40’s side.

C40 is integrated into many departments of the city, due to the local city advisor. The two main points of contacts are the international relations department, where ambassador Laudemar Aguiar is integral, and the mayor’s office with Rodrigo Rosa as a contact person.

**CONTRIBUTION OF C40 SUPPORT TO CLIMATE ACTION**

Overall Rio recognises the technical support that they are receiving from the city advisor, and form the local C40 office. Rio sees C40 as a resource to support the city climate actions, and to engage stakeholders and suppliers. The city officials see a substantial potential in having access to other cities through the networks. The mayor has for instance seen the combination of being chair of C40, and having the Olympics as a way to reinvent Rio into a more climate friendly city, and a city with a higher quality of life for its citizens.

According to CAM 3.0 data, the city of Rio received assistance from C40 on 45 out of 264 actions, or roughly 20 pct. of all actions.

Selected examples of how C40 has made a contribution towards the cities expected outcomes are described below.

**Assessing, measuring and reducing risks related to Climate Change**

As a result of their engagement with the Risk Assessment Network and receiving information on implementation processes and action plans from other cities, Rio has incorporated their Resilience plan into their disaster management policies, therefore reducing the future impacts of climate hazards in the city.

C40 assisted Rio in formalizing its Resilience Strategy by incorporating it into the city's governance through a Rio Resilience detailed Action Plan. C40 was an integral part of getting Rio into the 100 RC network. C40 helped add a revised and expanded risk analysis, and develop a more extensive stakeholder consultation. C40 was particularly involved in providing methods for developing hazard maps of the city that shows the climate change projections and impacts. Through this process C40 also

---

19 The LOG data includes all types on interactions, including calls, conference calls, meetings (informal, formal, face-to face, email exchange, peer exchange, webinar, workshop.
assisted Rio in developing a set of Individual Resilience indicators to map and assess citizen vulnerability.

**Waste**

C40 is helping Rio to increase its recycling rate while considering social inclusion and technical and economical feasibilities. Rio has a low percentage of waste being recycled, and it is particularly hard to implement recycling in the low income areas, and in favelas. C40 is also assisting Rio in evaluating options to increase organic waste diversion for composting. Herein by implementing an anaerobic digestion pilot project to treat organic waste from large generators. C40 assisted in the identification of a technology company from another city, and supported the establishment of a partnership between the waste company (Comlurb) and the Brazilian National Development Bank. BNDB provided a grant for the construction of waste treatment plan that is focusing on biomethanization.

**Key factors**

- C40 provides B.A. with technical knowledge that they are not able to identify on their own. They assist in gathering the relevant knowledge in order for the city to take decisions based upon the newest technologies.
- C40 connects B.A. with inspirational cities, where B.A. for instance is looking towards Copenhagen for a partnership agreement and has already set up another partnership agreement with Rotterdam.
- C40 is a platform to promote B.A. as a city, something that is close at heart to the current mayor. B.A. is looking to become the new start-up hub for young entrepreneurs in Latin America.
- C40 connects cities through the networks
- C40 aids in connecting the city to suppliers, and provides technical assistance through the city advisor
- C40 is present across different departments, whereas other networks only pinpoint one department

**SUGGESTIONS FOR IMPROVEMENT**

- A need for language options in Spanish/Portuguese. Many city officials are not fluent in English.
- Lack of international potency – C40 is not able to speak before the UN general assembly
- There is a big gap between city officials and development banks (IDB’s), training programs and workshops are needed in order to speed up the implementation of projects.
- City advisors are great, but not all cities can get one. There needs to be a closer technical connection to the cities, e.g. every 3 months to check on the progress, bring city agencies together, and provide legitimacy.
SOURCES

Interviews
- Luciana Nery, Deputy Chief Resilience Officer, City of Rio
- Ilan Cuperstein, C40 city advisor to Rio, C40
- Ambassador Laudemar Aguiar, The International Relations Department, City of Rio
- Bruno Neele, The International Relations Department, City of Rio
- Antonio Velloso, Secretariat of Transportation, City of Rio
- José Henrique Penido, COMLURB (Waste), City of Rio
- Rodrigo Rosa, Special advisor to the Mayor, City of Rio

C40 data
- C40 Network Outcomes Impact Reports (NOIR) Q1 2016
- Data collected for the Climate Action in Megacities report, http://cam3.c40.org/#/main/home

Other
- The Rio de Janeiro Low Carbon City Development Program,
- Resilience Strategy of the City of Rio de Janeiro
BOGOTÁ, COLOMBIA

<table>
<thead>
<tr>
<th>Population (metro)</th>
<th>9.8mn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayor</td>
<td>Enrique Peñalosa</td>
</tr>
<tr>
<td>GDP (US$)</td>
<td>160bn</td>
</tr>
<tr>
<td>Climate</td>
<td>Humid Moderate; No Dry Season</td>
</tr>
<tr>
<td>CO2 Target</td>
<td>16% reduction by 2019 compared with 2007</td>
</tr>
</tbody>
</table>

**OVERVIEW**

Bogotá is currently a member of six C40 networks, in two of which Bogotá is inactive. The city is highly engaged in the climate agenda, and has in previous administrations tried to leverage their international exposure. With the election of Mayor Peñalosa, this has however changed.

The city focuses mainly on solid waste and transportation in its engagement with C40, however within the last 2 years Bogotá has started to focus on the climate risk aspects.

**CITY CLIMATE PRIORITIES**

Bogotá currently does not have a plan to address climate change adaption. However, the *Regional Climate Change Plan* is currently in progress. This climate adaption plan will introduce a comprehensive inter-institutional network to jointly address regional challenges of climate change, estimate direct and indirect GHG emissions for the Capital Region and define a regional strategy for education, communication and sensitization if Bogotá among other things.

Bogotá has adopted several agreements. One, central initiative was the agreement 391, which adopted guidelines for the formulation of the *Climate Change Mitigation and Adaption District Plan* in 2009. Bogotá is the leader at national level on issues related to the fight against the climate change effects.

Bogotá’s climate goals relevant to C40 include:
- Develop and deliver a high-quality Bus Rapid Transit system (BRT)
- Greater investment in sustainable infrastructure through more effective use of existing funding or securing additional sources of finance (SIF)
- Increase uptake of low emission buses in city fleet to reduce emissions from the transportation sector (LEV)
- Assessing, measuring and reducing risks related to Climate Change (CCRA)

**C40 NETWORK MEMBERSHIP (2016)**

- Bus Rapid Transit (BRT)
- Climate Change Risk Assessment (CCRA)
- Green Growth (GG)
- Low Emission Vehicles (LEV)
- Sustainable Infrastructure Finance (SIF)
- Sustainable Solid Waste Systems (SSWS)
CITY ENGAGEMENT IN C40

Hitherto, there has been focus on branding Bogotá internationally. Having created prestige projects such as their BRT lines and urban mobility initiatives such as bike lanes, the city has been promoting their work. The city used to be very active in the BRT network, but has scaled down within this network of late. They are very interested in getting work done within the areas of sustainable infrastructure financing, working together with C40 and GIZ on funding projects, as well as the Inter American Development Bank.

Figure 9 Number of C40 interactions with other cities, by network – Bogotá (Q42013-Q42015)

Over the period Q42013-Q42015, Bogotá has been most active in the Green Growth (GG), Low Emission Vehicles (LEV), Sustainable Infrastructure Finance (SIF) and to a lesser extent Sustainable Urban Development (SUD), as evidenced by the LOG data captured over this period20. It is important to note that the log data by no means captures all of the city-to-city interactions resulting from network activity, but it gives a good indication of where most activity is focused.

Bogotá won the C40 Cities Climate Leadership Awards in 2013. Due to their recent efforts in the energy network, they expect to win the C40 award again. The city also leads the Declaration on Clean Buses and has held several workshops and seminars. Bogotá committed itself to do more workshops and webinars in 2016. The 14th and 15th July 2016, a two day workshop was held in relation to their new bike masterplan. Events in the Sustainable Waste Management sub-network have also been held in Bogotá. Peñalosa was to be in the C40 board, but due to a need to focus on the development of the city, he was not able to travel as much as was needed. Therefore, he was forced to turn down the opportunity.

Bogotá is not as active in the Bus Rapid Transit (BRT) network as they used to be. However they report that the activity in the network can be rather high, with webinars sometimes occurring every two weeks. The city only participates in the webinars that they find relevant in terms of new technology and financial mechanisms. However, data and learning are still exchanged intensively through mails to the C40. Since 2008, Bogotá participated in 4-5 workshops in Johannesburg, Copenhagen, London and 2 in Bogotá. After starting to implement projects in 2012, they scaled down their international activities. The recent change in mayor has resulted in a lost momentum in some of the initiatives and engagements previously spearheaded by Bogotá. The new administration, for instance, seemingly tries to distance itself from what the previous mayor did.

Bogotá is connected to C40 through the Office of International Affairs. This department communicates with the regional director for Latin America.

---

20 The LOG data includes all types on interactions, including calls, conference calls, meetings (informal, formal, face-to face, email exchange, peer exchange, webinar, workshop.)
CONTRIBUTION OF C40 SUPPORT TO CLIMATE ACTION

Out of the 142 actions reported in the CAM data by Bogotá, 8 were reported to have been helped particularly by the C40 network. According to the NOIR reports, Bogotá has engaged in 8 actions within the C40 network.

Selected examples of how C40 has made a contribution towards the cities expected outcomes are described below.

Organize a city hackathon to encourage the creation of new businesses

Bogotá engaged in the Green Growth network partly in order to organize a city hackathon to encourage the creation of new businesses. With much help from the C40 network, Bogotá managed to progress from phase 1 (potential opportunity) to phase 5 (in-effect and functioning). Bogotá used lessons learned from discussions at workshops and subsequent webinars to organize and implement a hackathon. More specifically, the workshop in Copenhagen and the subsequent webinar in New York City inspired Bogotá to hold an Eco-Hackathon. This benefitted the city by engaging the local community in finding green solutions, creating opportunities for collaboration between the city government and the community and demonstrating the low-cost tools that can be developed and improve environmental management.

Develop an EV taxi pilot to eventually scale up to a city wide program

Bogotá engaged in the Low Emission Vehicles in order to, among other things, further develop an taxi pilot to scale up to a city wide program. With medium help of the C40 network, Bogotá managed to progress from phase 1 (potential opportunity) to phase 4 (in-effect and at a limited testing scale). Bogotá wanted to update their clean bus strategy to incorporate low emission vehicles and thus reduce emissions from the transportation section. After years of planning, the city moved forward to overcome barriers such as high import taxes on vehicles. With the help from especially Manuel Olivera from C40 (the regional director), the city was able to progress with the pilot project and now they have a running pilot project with roughly 40 taxies.

Key factors
- Bogotá is benefiting tremendously by the Regional Director located in Bogotá. Having worked in Bogotá for many years, the Regional Director can provide a level of knowledge and historical context that can sometimes be lost in the city administration.
Promotion of Bogotá as a city with inspirational solutions

• Learning and gaining knowledge from other cities
• Gaining access to financing
• C40 is smaller and better organised than other networks, it is a network with a clear focus and with more close technical expertise

C40 has assisted Bogotá in implementing several pilot projects that are cutting CO2 emissions.

**SUGGESTIONS FOR IMPROVEMENT**

• The City has reported issues in terms of language barriers, where English is not always a strong language for all city officials.

• The City is in need of better access to financing opportunities and is looking towards C40 for these possibilities.

• Technical expertise is needed within the city, and this is something that they are looking much for.

**SOURCES**

**Interviews**
Valentina Wieser, Secretary General, Direction of International Relations
Ms. Natalia Currea, Direction of International Relations
Dr. Beatriz Cárdenas, General Manager, Administrative Unit of Public Services
Carlos Hernan Mojica Mojica, Deputy Manager, TransMilenio
Dr. Deysi Rodriguez, Environmental Professional, TransMilenio
Richard Vargas, Director, Institute for Risk Management and Climate Change
Claudia Diaz, Advisor to the Secretary of Mobility
Rosanna Sanfeliu Giaimo, Office of International Cooperation

**C40 data**
• LOG data (2013-2015)
• C40 Network Outcomes Impact Reports (NOIR) Q1 2016
• Data collected for the Climate Action in Megacities report, http://cam3.c40.org/#/main/home
• C40 website (C40.org)
NEW YORK CITY, USA

<table>
<thead>
<tr>
<th>Population (metro)</th>
<th>8,491,079</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayor</td>
<td>Bill De Blasio</td>
</tr>
<tr>
<td>GDP (million US$)</td>
<td>778 bn</td>
</tr>
<tr>
<td>Climate</td>
<td>Humid Moderate; No Dry Season</td>
</tr>
<tr>
<td>CO2 Target</td>
<td>81% reduction by 2050 compared with 2005</td>
</tr>
</tbody>
</table>

OVERVIEW

New York City has been involved in C40 since its beginning in 2005. NYC has been active in several different C40 networks and has been successful in the C40 Cities Awards, which were launched in 2013.

According to the CAM data, New York City has engaged in 213 actions. 196 of these actions did not report information about the most helpful exchange. 12 actions reported that neither cities in the C40 Network nor cities outside the C40 Network was the most helpful exchange in delivering the action. 5 actions, however, have been particularly helped by exchange with the C40 network.

According to the NOIR data, New York City has engaged in 19 actions within the C40 network.

C40 NETWORK MEMBERSHIP (2016)

- Climate Action Planning
- Climate Change Risk Assessment (CCRA)
- Connecting Delta Cities
- Cool Cities (CC)
- District Energy (DE)
- Green Growth (GG)
- Low Emission Vehicles (LEV)
- Measurement
- Municipal Building Efficiency (MBE)
- Private Building Efficiency (PBE)
- Reporting
- Sustainable Infrastructure Finance (SIF)
- Waste 2 Resources (W2R)
- Food systems

CITY CLIMATE PRIORITIES

In 2007, Mayor Bloomberg released PlaNYC 2030, a comprehensive sustainability plan for New York's future. It puts forth a strategy to reduce the city's carbon footprint (e.g. an emissions cut by 30% compared to 2005 levels), while at the same time accommodating population growth of nearly one million, and improving its infrastructure and environment.

The New York City Panel on Climate Change (NPCC) was convened by Mayor Michael Bloomberg in August 2008 as part of PlaNYC, the City's long-term sustainability plan. The NPCC consists of scientists who study climate change and its impact, as well as legal, insurance, and risk management experts. This Annals volume presents the NPCC report, including New York City-specific climate change projections, tools to help entities identify climate vulnerabilities and develop adaptation strategies, and recommendations on how to foster an effective climate resilience program.

As part of the PlaNYC, The Greener Greater Buildings Plan (GGBP) was launched which is a comprehensive set of energy efficiency laws, targeting New York City's largest existing buildings which constitute 45 percent of citywide energy use. For these buildings, greater than 50,000 square feet, the policies require an annual benchmarking of energy and water use with public disclosure; an audit and retro-commissioning every ten years; for non-residential spaces, upgrades for lighting to meet the energy code, and the installation of electrical meters or sub-meters for large tenant spaces.

---

21 The section is based on the various plan and documents listed below.
On June 11, 2013, the City released "A Stronger, More Resilient New York", a comprehensive plan that contains actionable recommendations both for rebuilding the communities impacted by Sandy and increasing the resilience of infrastructure and buildings citywide.

In September 2014, Mayor de Blasio released One City: Built to Last, a ten-year plan to retrofit public and private buildings to reduce the city’s greenhouse gas emissions 80% by 2050 relative to 2005 levels.

In April 2015, One New York: The Plan for a Strong and Just City (OneNYC) laid out a vision for preserving and enhancing New York City’s role as a leading global city. OneNYC is premised on the idea that environmental and economic sustainability must go hand in hand, and it sets forth a comprehensive blueprint to make that happen. A stronger, more equitable city is also a more sustainable and more resilient city—and vice versa.

NYC climate goals/actions relevant to C40 include:

- Implementing the “Built to Last” strategy, including using buildings data to increase employee engagement with energy efficiency (MBE)
- Implementing the “Built to Last” strategy, including using buildings data to underpin energy performance contracting (MBE)
- Develop coastal protection against storm surge and eventual sea level rise (CDC)
- Increased rainwater management (CDC)
- Assessing, measuring and reducing risks related to Climate Change – and Implement 257 identified priority adaptation actions (CCRA)

CITY ENGAGEMENT IN C40

NYC has been involved in C40 since the beginning. NYC has been active in several different C40 sub-networks and relatively active in general.

The primary reasons for participation in the networks and other interactions are to share experiences, get new ideas and inspiration and create new relations. The idea of having a platform to share and discuss common challenges is stressed. This is mentioned for both policy level and technical staff level. It was noted that over time C40 has gradually developed more focus on adaption, compared to the initial almost sole focus on mitigation, thus better balancing the two “components” of climate change.

Figure 11 Number of C40 interactions with other cities, by network – New York City (Q42013-Q42015)

Over the period Q42013-Q42015, NYC has been most active in the Low Emission Vehicles (LEV), followed by the Private Building Efficiency (PBE) and to a lower extent the Connecting Delta Cities (CDC), Climate Change Risk Assessment (CCRA) and Green Growth (GG), as evidenced by the LOG data captured over this period. It is important to note, however, that the log data by no means captures all of the city-to-city interactions resulting from network activity, but it gives a good indication of where most activity is focused.

NYC has been very active and

---

22 The LOG data includes all types of interactions: calls, conference calls, meetings (informal, formal, face-to-face), email exchanges, peer exchanges, webinars, and workshops.
successful in the The C40 Cities Awards, which were launched in 2013.

In 2013 NYC was the winner of the Adaptation and Resilience category, for its development of A Stronger, More Resilient New York plan.

In 2014, NYC was awarded Energy Efficient Built Environment for the Greener, Greater Buildings Plan (GGBP). In 2015, New York - One City: Built to Last, and the Buildings Technical Working Group was awarded in the category on Building Energy Efficiency.

In NYC, the membership of the C40 Network is administered at the Mayor level, in the Mayor’s office which coordinates relations. However, single departments or agencies can participate in webinars or other kinds of interactions. Interviews also pointed to the challenges of the networks in some way loose organisation e.g. making it difficult to keep track of the contacts and having a clear picture of whom to reach out to in relation to specific themes. NYC is present in 17 networks and oversight and coordination of peer-to-peer involvements is a challenge. Other interviews stressed the need to penetrate at the agency level, as climate change cannot be targeted in silos.

The engagement varies, depending on the network and format. The overall leadership of C40 is considered good and clear, and NYC generally knows whom to contact at C40. Meanwhile, the relationship between the regional structure and the network can appear unclear.

**CONTRIBUTION OF C40 SUPPORT TO CLIMATE ACTION**

The main benefits of C40 identified by the interviewees were:

- access to international knowledge and experience
- a network of like-minded contacts with whom it is possible to share ideas and success stories
- a platform for sharing ideas and best practice methodology
- enhanced visibility of the climate actions, externally as well as internally

Another advantage from the C40 participation mentioned is the global legitimacy that the network brings to the city’s climate and sustainability efforts.

Selected examples of how C40 has made a contribution towards the cities expected outcomes are described below.

**Grow the green economy**
Within the Green Growth network, New York City is working to understand the size and nature of their green economy and green growth potential in order for the city to identify the most effective interventions and help make the case for further sustainable policies that can support the growth of the green economy. NYC has particularly launched five actions to grow the green economy, including:
1. Focus on growing the green digital and financial services to complement the existing industry in the city
2. Determine the connection between growing the green economy and creating opportunities for the most deprived neighbourhoods in the city
3. Develop a connection with other cities’ cleantech/ green businesses
4. Build the Urban Future Lab as a hub, and host many more start-ups.
5. Develop a technology demonstration space.

In terms of involvement from the C40 Network the interviews pointed out that in relation to green growth the inspiration and best practice from other cities has been a valuable input.

**Improve energy efficiency in private buildings**
New York City has a goal within the Private Building Efficiency (PBE) sub-network to extend the efforts for improving energy efficiency, reducing GHG emissions and improve sustainability citywide. Already a growing number of building are more sustainable and energy efficient than before. However over the next ten years NYC will work to ensure that newly constructed and substantially renovated buildings meet leading edge performance standards and that those standards are enforced. Engagement with C40 networks has been recorded and has supported the progress of these City initiatives.

**Key factors**
In addition to the above-mentioned benefits of being a part of C40, the following influencing factors were highlighted in NYC:

- Joining C40 improved NYC’s **relations/network** to foreign and domestic cities. The international forum and C40 supporting and facilitating contact to foreign persons like e.g. mayors (**match-making**). The international experience and knowledge sharing was the main benefit flagged by the city advisor.

- Being part of C40 helps to **create/strengthen awareness** of the climate actions. For NYC it is advantageous to participate in the global conversation on climate and be part of a bigger movement as this ensures greater visibility of important goals and facilitates more support for related actions. On a concrete level the C40 network has helped validate and give input to the city’s climate action plan.

City officials generally reported their **satisfaction with the C40 network, relative to other networks.** Compared to other networks (ICLEI, 100 RC etc.) interviewees highlight that C40 is rigorous with a defined structure and activities, and that cities have committed. The structure is already paid for, which is considered better than a membership based structure. At the same time it is mentioned that C40 is a thought leader, which gives credibility to the local climate agencies.

A general impression from the interviews is that even without C40 NYC would continue to be very active on and focus on climate change. To illustrate, NYC does emission inventories yearly and would most likely have done so also in absence of C40. Resources are limited so data is needed to identify effective strategies.

Meanwhile, the data element is highlighted, meaning that the strong focus on data and evidence is a hallmark of C40. Also, the fact that there is a common methodology makes it easier to compare between cities.

In addition, the motivational aspects were mentioned. C40 is seen as a place to share and a platform for peers, which in turn helps energize its constituents.

Also, the reduction of GHG is a complex and multifaceted area, in which it is very difficult to establish one-dimensional cause and effect relationships. As coined in one of the interviews, “There is no sole impact on GHG. It’s a team effort, and C40 is part of the team”, stressing the need for concerted action and cooperation.

**SUGGESTIONS FOR IMPROVEMENT**

The interviews pointed to several ideas to consider going forward, spanning operational, tactical and strategic issues.

- Operational: The website, and hence access to publications and knowledge is mentioned to be difficult to access. A lot of time and efforts go into reporting, so it’s important to make data easily accessible and useful to the cities. Support for travel was mentioned.

- Tactical: One strand of ideas related to the organisational set-up in the cities. A case in point is where to anchor the C40 point of contact. Should it be centralised, and if so, how to make sure that you penetrate the agencies and get engagement? If a decentralised model is chosen, then how best to make synergies and knowledge sharing. A related aspect is where to place the city adviser: If the city prioritizes strategic work, then this could be in favour of a placing the adviser in the mayor’s office. If the work is of a more practical nature, then the departmental level may be more appropriate. Another strand centres on the support needed, mentioning the need for implementation support, as the challenge is to activate implementing agencies, as well as staff development e.g. communications trainings for people presenting at network events etc.

- Strategic: It could be worthwhile taking a look at how to expand what C40 does on equity – the equality side. C40 needs unifying strategies. Also, stronger cooperation with other networks was mentioned, e.g. joint programming and co-sponsorships of events.
SOURCES

Interviews
- Barbara Turk, Food Systems Network
- John Lee, C40 City Adviser Supervisor, Reporting and Measurement Networks, CNCA Representative
- Katherine Greig, Connecting Delta Cities and Climate Risk Assessment Networks
- Dan Zarrilli, Senior Director, Climate Policy and Programs/Chief Resiliency Officer, Mayor’s Office, and C40 Primary Contact
- Liz Hanson, New York City C40 City Adviser, Mayor’s Office of Sustainability
- Nilda Mesa, Director, Mayor’s Office of Sustainability, and C40 Primary Contact
- Alan Cohn Climate Program Director at NYC Department of Environmental Protection
- Mark Simon, Director of Alternate Fuel Programs for the NY City Department of Transportation

C40 data
- C40 Network Outcomes Impact Reports (NOIR) Q1 2016
- Data collected for the Climate Action in Megacities report, http://cam3.c40.org/#/main/home

Other
- C40 Network website: www.c40.org
- http://www.nyas.org/publications/annals/Detail.aspx?cid=ab9d0f9f-1cb1-4f21-b0c8-7607da5dfcc
WASHINGTON DC, USA

<table>
<thead>
<tr>
<th>Population (metro)</th>
<th>658,893</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayor</td>
<td>Muriel Bowser</td>
</tr>
<tr>
<td>GDP (US$)</td>
<td>122 Billion</td>
</tr>
<tr>
<td>Climate</td>
<td>Cold Continental; No Dry Season</td>
</tr>
<tr>
<td>CO2 Target</td>
<td>80% reduction by 2050 compared with 2006</td>
</tr>
</tbody>
</table>

OVERVIEW

Washington DC joined the C40 Cities Climate Leadership Group (C40) in late 2013 to further enhance the District’s efforts to become one of the world’s most sustainable cities and to cut greenhouse-gas emissions. DC has been active in several different C40 networks and is relatively active in general.

C40 NETWORK MEMBERSHIP (2016)

- Bus Rapid Transit (BRT)
- *inactive member* Climate Change Risk Assessment (CCRA)
- Cool Cities (CC)
- District Energy (DE)
- Land Use Planning (LUP)
- Low Emission Vehicles (LEV)
- Municipal Building Efficiency (MBE)
- Private Buildings Efficiency (PBE)
- Sustainable Infrastructure Finance (SIF)
- Waste 2 Resources (W2R)
- Food systems
- Connecting Delta Cities (CDC)

CITY CLIMATE PRIORITIES

When kicking off the Sustainable DC Plan process in July 2011, former Mayor Vincent C. Gray announced his intention to make the District of Columbia the healthiest, greenest, and most liveable city in the United States in one generation. In January 2013 and July of 2014, two pieces of legislation to implement the Sustainable DC Plan were passed into law, and designed to promote green infrastructure, healthy air, clean rivers, tree canopies, urban agriculture, environmental literacy, energy efficiency, renewable energy, and clean energy financing. The legislation also addresses water pollution in rivers, protect children from toxic exposure, and aid in energy assistance for low-income and elderly residents, among other initiatives.

The Sustainable DC plan takes a comprehensive approach to building a sustainable city across all sectors. Through solutions in the built environment, energy, food, nature, transportation, waste, and water sectors, the plan addresses current and future challenges to create jobs and grow the local economy; improve public health through clean air and water and access to healthy food and lifestyles; provide equal access to services and assistance for those who need it most; and protect the local environment and global climate.

The plan asserts the goal of reducing local greenhouse gas emissions by 50% in 2032, and highlights specific energy efficiency and renewable energy targets, but also integrates progressive community engagement.

---

23 The section is based on the various plans and documents listed below.
The plan’s climate adaptation planning goal is to advance physical adaptation and human preparedness to increase the District’s resilience to future climate change. Specific adaptation actions to achieve this goal are to:

- Evaluate the vulnerability of the District’s energy infrastructure to the anticipated impacts of climate change.
- Prepare District emergency services to respond to severe climate-related events such as extreme heat, storms, and flooding.
- Require adaptation solutions as part of planning for new developments.
- Ensure that transportation infrastructure can withstand the upper ranges of projected climate change impacts.

In 2015, Washington DC joined the mayors of 16 international cities across nine nations to launch the Carbon Neutral Cities Alliance, a collaboration of global cities committed to reducing greenhouse gas (GHG) emissions by 80 percent or more by 2050.

Washington DC **climate goals/actions relevant to C40** include:

- Increase uptake of electric vehicles city wide to reduce emissions from the transportation sector. (LEV)
- Improve resiliency and reduce carbon emissions through decentralised generation, micro grids and thermal district energy networks (DE)
- Be the healthiest, greenest and most liveable city in the United States (LUP)
- Assessing, measuring and reducing risks related to climate change – and prepare a climate change adaptation plan (CCRA)

### CITY ENGAGEMENT IN C40

Washington DC joined the C40 Cities Climate Leadership Group (C40) in late 2013, to further enhance the District’s efforts to become one the world’s most sustainable cities and to cut greenhouse-gas emissions. Washington DC has been active in several different C40 sub-networks and is relatively active in general.

The primary reasons for participation are to share experiences, and learn from and speak about lessons learned. The idea of having a platform to share and discuss our common challenges is stressed. This is mentioned at the policy/mayoral and technical staff levels.

Also, C40’s role as a professional and well-renowned (network) facilitator was highlighted as a decisive factor when choosing to join. Cities are generally approached with many offers, and thus have to choose in which to spend their limited time resources. It was mentioned that C40 has become better organised over the years, which is seen as a positive development.

**Figure 12 Number of C40 interactions with other cities, by network – Washington DC (Q42013-Q42015)**

Over the period Q42013-Q42015, Washington DC has been most active in the Low Emission Vehicles (LEV), followed by District Energy (DE), the Private Building Efficiency (PBE), the Sustainable Urban Development network, and the Climate Change Risk Assessment (CCRA) and the Cool Cities (CC), as evidenced by the LOG data captured over this period.\(^{24}\) It is important to note, however, that the log data by no means captures all of the city-to-city interactions resulting from network activity.

\(^{24}\) The LOG data includes all types of interactions: calls, conference calls, meetings (informal, formal, face-to face), email exchanges, peer exchanges, webinars, and workshops.
but it gives a good indication of where most activity is focused.

In 2015, Washington DC received an award from C40 in the Green Energy category for the District of Columbia Government Wind Power Purchase Agreement (PPA), in which 30% of the District government’s electricity will be supplied from a 46 megawatt wind farm.

Washington DC’s C40 activities are organisationally anchored in the Urban Sustainability Administration of the Department of Energy & Environment. The Urban Sustainability Administration’s mission is to develop innovative policies and programs to address sustainability, green building, climate change, equity, and sustainable materials management. The Administration also oversees the implementation of Sustainable DC, the District’s sustainability plan.

Washington DC has chosen a dispersed model for their participating in C40, particularly the peer-to-peer networks. This means that the subject matter experts (policy and technical) from Washington DC are able to talk directly with subject matter experts in other participating cities. Meanwhile, the need to have synergies with and between the networks was also underlined in the interviews.

CONTRIBUTION OF C40 SUPPORT TO CLIMATE ACTION

Overall C40 is seen as a professional facilitator which provides an international platform for learning and sharing of experiences. There is a “high level of polish” and peer-to-peer engagement, both at the policy and technical level. Moreover C40 is seen to play an important role in signalling the importance of climate actions to the policy level and thereby make the city’s role on climate a priority. In this respect C40 is viewed to entail a prominent voice for raising global awareness.

According to the CAM data, Washington DC has engaged in 206 actions. On 85 of these actions the city did not answer which exchange was most helpful in delivering the action. 93 actions reported that neither cities within or outside the C40 helped. 7 actions have been helped by cities within the C40; meanwhile 21 actions were helped by cities outside the C40. According to the NOIR data, Washington DC has engaged in 14 actions within the C40 network.

Selected examples of how C40 has made a contribution towards the cities expected outcomes are described below.

Increase public transportation options and efficiency in the city

The District Department of Transportation in 2014 released a new long-range transportation plan called MoveDC to expand transportation choices, identify priority transit corridors, and increase access to transit and bicycle facilities in all areas of the District. The plan identifies 70 miles of high-capacity transit corridors for the development of streetcar and/or bus rapid transit. To increase public transportation, Washington DC gathered evidence to help evaluate BRT as a potential solution for specific corridors in the city. This concrete action is in stage 2 and ‘still under consideration or awaiting final authorisation.’ Progress is reported to be from 1 to 2, and C40 Networks have been helpful in the process so far.

Key factors

- According to Washington DC, a key benefit of the C40 Network is to provide thematic and general guidance and governance. This makes it possible to share experiences in spite of local conditions and variations among member cities.
- Another key factor is the ability to share cutting-edge information and best practices across cities that can be used concretely, but also as inspiration: "Hey, Copenhagen is doing this. Why can’t we?"
- Specifically, Washington DC has formed new collaborative relationships with several cities, including Copenhagen, Denmark and Sydney, Australia. It’s helped sustainability and climate planners move beyond only looking at U.S. plans to include sustainability and climate plans from across the globe. Staff in Washington DC is now able to talk to staff in the world’s leading climate cities to ask why they made certain decisions around climate or model programs after other successful programs.
City officials generally reported their **satisfaction with the C40 network** relative to other networks. DC mentioned that C40 is a good choice in a market where many different actors and networks offer cities possibilities for cooperation.

The general impression from the interviews is that even without C40 Washington DC would continue to focus on sustainability and on climate change. Meanwhile, it was mentioned that joining C40 helped internally to make Washington DC commit to and get funding for their climate adaptation plan. In addition, it has increased the communication with other cities around the globe. Also, the element of “friendly competition/benchmarking” was noted, meaning that other cities were one source of inspiration when setting the goals in the plan.

In addition, the **communicative value** of being in C40 was not neglected. C40 is held in high regard, and it carries prestige to be in C40. It provides an international network, which doesn’t necessarily accelerate initiatives, but it helps to make addressing climate change a city priority, and it helps shape the dialogue.

### SUGGESTIONS FOR IMPROVEMENT

The interviews pointed to several ideas to consider going forward, spanning operational, tactical and strategic issues.

- **Operational**: Better access to information on the website. C40 should make a data slide deck based on the reported data etc. that the cities can use themselves, both internally and externally. Support for travel was noted.

- **Tactical**: The national C40 networks should better determine city priorities and make sure that the webinars are tied to those priorities, to increase the level of relevance and produce concrete takeaways for the participants. The participation is ok in the webinars, and the frequency of activities is also deemed adequate. The webinars should be more directed towards the cities’ priorities or the goals that C40 wants to achieve. The calls are not tied back into the C40 overall goals. Furthermore, the need for C40 to be active and reaching out to cities were mentioned. The possibility of (more) face-to-face bilateralism was noted.

- **Strategic**: Stronger cooperation and synergies with other networks was mentioned in order to avoid duplication. C40 should increase the visibility and involvement of the mayors, e.g. have roundtables for mayors.
SOURCES

Interviews
- Tommy Wells, director of the District Department of Energy & Environment (DOEE),
- Maribeth DeLorenzo, Deputy Director, Urban Sustainability Administration, (DOEE)
- William (Bill) Updike, Chief of the Green Building and Climate Branch in the Urban Sustainability Administration (DOEE)
- Laine Cidlowski, DC Food Policy Director, Office of Planning
- Steven Gyor, Sustainability Planner, Office of Planning
- Phetmano Phannavong, Watershed Protection Division (DOEE).

C40 data
- C40 Network Outcomes Impact Reports (NOIR) Q1 2016
- Data collected for the Climate Action in Megacities report, http://cam3.c40.org/#/main/home

Other
- C40 Network website: www.c40.org
- http://doee.dc.gov/page/urban-sustainability-administration
COPENHAGEN, DENMARK

<table>
<thead>
<tr>
<th>Population (metro)</th>
<th>0.6mn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayor</td>
<td>Frank Jensen (2014)</td>
</tr>
<tr>
<td>GDP (US$)</td>
<td>127 bn</td>
</tr>
<tr>
<td>Climate</td>
<td>Humid Moderate; No Dry Season</td>
</tr>
<tr>
<td>CO2 Target</td>
<td>100% reduction by 2025</td>
</tr>
</tbody>
</table>

OVERVIEW

Copenhagen joined C40 in 2008 and is currently a member of 3 C40 networks and is leading the Green Growth Network. According to data collected by C40 (NOIR data), Copenhagen has engaged in 9 actions within the C40 networks. The CAM data shows that the 135 actions that Copenhagen has started, have not been initiated through C40.

Copenhagen has been active in a number of climate action areas, for instance in the Connecting delta cities network, as well as being represented at international climate events such as the COP and NYC Climate week events.

CITY CLIMATE PRIORITIES

Copenhagen has developed a Climate Action Plan (issued in 2009), which set a goal of 100 pct. GHG reductions by 2025. The purpose was to place Copenhagen on the international map and agenda, as well as proving that climate ambitions could go hand-in-hand with economic growth and an increase in liveability. The sub-goal of 20 pct. reductions by 2015 was met already in 2011.

Copenhagen climate goals relevant to C40 include:

- Develop climate change adaptation for the entire city (CDC)
- Decrease CO2 Emissions, but continue to increase economic growth (GG)
- Energy consumption reductions (LCD)
- CO2 neutral energy production
- CO2 neutral mobility (LCD)

C40 NETWORK MEMBERSHIP (2016)

- Connecting Delta Cities
- Green Growth
- Low Carbon Districts (Climate Positive)

CITY ENGAGEMENT IN C40

The city of Copenhagen is mainly driven by participation by two drivers, 1) knowledge exchange and 2) promotion of Copenhagen. Copenhagen joined C40 in 2008. The city targeted C40 even though Copenhagen did not qualify as a mega city (the main category at the time). They aimed specifically for the status of innovator and wanted to participate in the most influential city network. The city has since then made use of its status as an innovator city in order to promote climate solutions from Copenhagen. The city sees the C40 member cities as a potential for growth in local Danish companies.
Copenhagen has participated actively in C40 events, e.g. side-events in relation to the COP and the NYC Climate Week. The city has also been nominated for the C40 awards, and has seen these awards as a platform for exposure. They did not win the last time around. Copenhagen has held C40 workshops, on Green Growth and on climate adaptation. Moreover the city is involved in developing the City Solutions Platform, together with Realdania and the Danish NGO CLEAN.

Copenhagen’s Economic administration has a single unit which acts as the C40 anchor for the entire city and plays a coordinating role. This means that administrative direction is from this office. The city has designated network participants in the respective departments; these are mainly in the environment and technical administration.

CONTRIBUTION OF C40 SUPPORT TO CLIMATE ACTION

Overall Copenhagen recognises two main advantages of participation in the C40 network. Firstly, as a way to connect to other cities, share information and develop city actions. Secondly as a way to promote Copenhagen as an innovator city. It was repeatedly stressed that C40 was an extraordinary platform for exposure, and to showcase climate solutions. The city of Copenhagen was already in the works with their climate action plan when they joined C40, and C40 was not seen as a clear catalyst for climate actions in Copenhagen. This is also supported though the CAM data, where no actions were reported initiated through C40. One example that goes against this pattern is, however, the climate adaptation plan.

Climate Change Adaptation Plan
The City of Copenhagen participated in a C40 event in Tokyo back in 2008. The Connecting Delta Cities (CDC) network was initiated at the Tokyo meeting, which in the beginning was aimed at coastal delta cities.

At the founding meeting, the progress of cities such as New York City, London, Rotterdam and Tokyo kick-started the idea and need for a specific climate adaptation plan for Copenhagen. Shortly after the Tokyo meeting, the participating city officials from Copenhagen created a memo aimed at the leadership in Copenhagen detailing the need for a climate adaptation plan. In order to sell the idea fully to the leadership, the city of Rotterdam came to promote their climate adaptation plan. Throughout the development of the Copenhagen climate adaptation plan the network was used to peer

25 The LOG data includes all types on interactions, including calls, conference calls, meetings (informal, formal, face-to face, email exchange, peer exchange, webinar, workshop.
review the work, and to bounce ideas back and forth. Copenhagen particularly formed ties together with London. After the implementation of the climate adaptation plan, Copenhagen has now taken on a leading position in the CDC network and is sharing their ideas, projects, but also their challenges. This was particularly stressed in Copenhagen, that the forum C40 creates, where cities talk only to cities, creates a special trust and bond between cities (and the city officials).

Key factors
- Promotion of Copenhagen as a liveable and climate city in order to spur export of Copenhagen solutions. Copenhagen has even created marketing material promoting “Copenhagen Solutions” that focus on CO2 reducing and liveability increasing solutions.
- The way C40 is able to create publicity and provides the platform for the Lord Mayor of Copenhagen to be on the same stage as mayors of mega cities such as New York, Rio de Janeiro, London, Paris, etc.
- Knowledge sharing in terms of access to other influential and mega cities. Learning from other cities is important.
- C40 differentiates from other network by being much better at communicating the agenda, creating an atmosphere. Several times it was referred to as being able to create a scene for the “Lord mayors of rock” – a platform for the Lord Mayors to be placed upon as “rock stars”.
- C40 is an exclusive club, not a massive network where focus is easily lost. C40 attracts the most powerful and most innovative cities. This creates energy within the network and spurs healthy competition.
- C40 is a smaller and more focused network; it enables a better connection to be made between city officials, also on a social level, which creates trust. For many city officials the networks (such as the CDC) are a safe space to share challenges faced.

C40 has mainly created a long term impact in Copenhagen in the terms of the climate adaptation plan. In effect ensuring that the risks of climate change became an agenda in Copenhagen, and securing the citizens in the future against massive rain and flooding events.

SUGGESTIONS FOR IMPROVEMENT

The C40 staff could become better at organising events and providing the city officials with material in order to brief mayors. Several times the city officials has had difficulties in briefing their mayors on the meeting/sessionconference they were to participate in, which means that the mayors will not participate. A mayor has many responsibilities, which makes it difficult to be in the detail with all areas of the city. When a mayor is placed in a C40 workshop or conference and have to discuss, in detail, climate goals, initiatives, and results with other cities, they need a good insight into the topics and participants beforehand.

The C40 organisation could become better at setting the agenda on the international political scene. C40 has reached a level of influence, now it is time to decide how to use that influence. The member cities are looking towards C40 not only as an organisation for meeting other cities. But also as a leading organisation on the climate agenda internationally. It would suit the C40 organisation to grab this role as a voice for the largest and most influential cities in the world. The C40 organisation could generate a vast amount of influence.

Continue to focus on actions, and not becoming a place for all talk and no action.
**SOURCES**

**Interviews**
- Annemarie Munk, Head of division, Finance Administration
- Christina Anderskov, International Strategist and Sustainability Coordinator, Administration for the Technical and Environment
- Lykke Leonardsen, Project Manager Climate and Climate Adaptation, Administration for the Technical and Environment
- Jeppe Søndergaard, Head of division, Finance Administration

**C40 data**
- C40 Network Outcomes Impact Reports (NOIR) Q1 2016
- Data collected for the Climate Action in Megacities report, [http://cam3.c40.org/#/main/home](http://cam3.c40.org/#/main/home)

**Other**
- Copenhagen Climate Action Plan, 2009
**OVERVIEW**

London was a founding member of the C40 in 2005, on the initiative of then Mayor of London Ken Livingstone. Since then, London has been actively engaged in the C40, it currently takes part in 11 networks and leads the Low Emissions Vehicles network. In the LEV network, London was one of the initiators of the Clean Bus Declaration and hosted a Clean Bus Summit in June 2015. London has also won a C40 award in the category Air Quality, “New Taxi for London”.

**CITY CLIMATE PRIORITIES**

The Mayor’s Climate Change Mitigation and Energy Strategy sets out the actions required by the Mayor, national government, the wider market and Londoners to reach the target of reducing London’s CO2 emissions by 60% of 1990 levels by 2025. Progress is monitored and reported annually through the Mayor’s Climate Change Mitigation and Energy annual report and through the London Energy and Greenhouse Gas Inventory.

The Mayor’s Climate Change Adaptation Strategy sets out actions required by a number of stakeholders to help improve London's resilience to extreme weather. Progress against these actions is monitored and many actions from the Adaptation Strategy have been completed. The Greater London Authority is currently working with the London Climate Change Partnership to develop outcome-focused monitoring to identify how London is progressing in terms of becoming better adapted to extreme weather.

London’s key climate action goals being pursued together with C40 include:
- Assessing, measuring and reducing risks related to Climate Change (CCRA)
- Generate 25% energy from decentralised sources by 2025, with focus on district heating networks (DE)
- Grow the green economy, mainstream the green economy as a core part of the city's economy and economic development work (GG)
- Increase uptake of low emission buses in city fleet to reduce emissions from the transportation sector (LEV)
- Delivering ambitious low carbon sustainable development (LCD)
- Improve energy efficiency in private buildings (PBE)
CITY ENGAGEMENT IN C40

In October 2005, then Mayor of London Ken Livingstone convened representatives from 18 megacities to pursue action and cooperation on reducing greenhouse gas emissions. The meeting resulted in an agreement to cooperate on reducing climate emissions by taking decisive and immediate action on a number of points, most notably the creation of procurement policies and alliances to accelerate the uptake of climate-friendly technologies and influence the market place.

As a founding city of C40, London has been actively involved since inception. According to interviews the level of activity has varied a bit between mayoral mandates, depending on the priorities of the mayor in office and to what extent international cooperation in climate action was endorsed or not. London has recently had a change in mayor (May 2016), and Mayor Khan was elected to the Steering Committee for C40, as Vice Chair, with an announcement in August 2016. However, future priorities for engagement were not yet clear at the time of the interviews (mid-July 2016) and no new primary contact had been appointed. This illustrates one of the innate challenges of C40’s work: that changes at the political level influence the engagement and activity of the member cities and can also alter priorities in climate action. The main drivers for London’s C40 engagement were stated to be friendly competition between cities, support in measurement, comparison and benchmarking with other cities and knowledge sharing and learning on what works and what does not work.

Figure 14 Number of C40 interactions with other cities, by network – London (Q42013-Q42015)

Over the period 2013-2015 London was most active in the Low Emissions Vehicles, Connecting Delta Cities and Private Building Efficiency as evidenced by the LOG data captured over this period. It is important to note that the log data by no means captures all of the city-to-city interactions resulting from network activity, but it gives a good indication of where most activity is focused. London is the lead city on the LEV network, and has had a strong interest in CDC and PBE, which was also evidenced in the interviews. In the LEV network, London was one of the initiators of the Clean Bus Declaration and hosted a Clean Bus Summit in June 2015. London has also won a C40 award in the category Air Quality, “New Taxi for London”.

As London takes part in many networks, the cities involvement is spread over several technical departments and units. It is primarily the technical contacts that prioritise their engagement and activity in the thematic networks, based on relevance and perceived benefit. The coordination and policy level work, was previously with a Deputy Mayor (primary contact), and it was assessed likely that it would continue like this under the new Mayor once appointments had taken place to engage constructively with other cities.

The LOG data includes all types on interactions, including calls, conference calls, meetings (informal, formal, face-to face, email exchange, peer exchange, webinar, workshop.)
CONTRIBUTION OF C40 SUPPORT TO CLIMATE ACTION

Overall London recognises two main advantages of participation in the C40 network. Firstly, as a resource to support the city climate actions: city staff frequently mentioned that having access to a colleague who sits in another city in a similar position is a valuable knowledge resource and also allows you to speak with more confidence when implementing actions in your own city. Secondly, C40 membership was described as a knowledge sharing and knowledge generating source, by stimulating cities to better measure emissions, and also compare their baseline situation as well as results of actions.

London takes part in several thematic networks, and the level of activity varies between networks and also with time. In the following a selection of reported C40 contributions to concrete climate actions is described, based on interviews and secondary sources.

The Clean Bus Declaration – contributing to lowering the price for hybrid buses
London together with other cities involved in the LEV network initiated the Clean Bus Declaration in 2015, and 22 C40 cities signed the declaration. The cities have committed to having over 40,000 buses operating via clean technologies by 2020. If these cities reach their 2020 clean bus targets, it would result in a cumulative 880,528 tons per year in GHG savings. If all new buses procured by signatory cities between now and 2020 incorporate clean technology, this figure would rise to almost 989,000 tons per year in GHG savings. The CBD enabled London to obtain a 10% reduction on prices for hybrid buses, according to the city’s own estimates, through a strengthened negotiation position with providers by showing the market potential. It was identified during interviews as a good example of what cities can achieve together when finding common causes, by jointly addressing a need.

Shared approach to measuring Green Growth
London is working with the Green Growth Network to pursue a shared approach to measure the size of the green economy in order to support green growth strategy. This has been supported by C40 through funding of a consultant which will support the cities in their work. It is foreseen that the results of the work will contribute to the knowledge base on Green Growth, share experiences and help cities setting priorities for their Green Growth based on solid evidence from other cities.

Improving energy efficiency in Private Buildings
In the Private Building Efficiency (PBE) network, London is engaging to improve energy efficiency in private buildings, with a target to cut emissions 60 per cent by 2025, compared to 1990 levels. According to interviews the exchange taking place in the network is seen as valuable and useful, in that it enables a discussion on what works and what does not, what has been tested in other cities etc. The aim is also to compare and monitor between cities, to track where policies have an actual impact and are effective.

Providing and sharing knowledge between cities
London has been active in the Connecting Delta Cities network. According to interviews, the cooperation mainly consists of knowledge sharing which provides inspiration and helps shape the workplan of the participating cities. It was emphasised that collaboration consisted of both giving and taking, and that for the cities it is important to strike a balance in their engagement to ensure the added value and joint value of collaboration efforts.

Key factors
A range of factors influence the outcomes of C40 involvement in London, both internal and external. The strongest factors are listed below, as reported through the interviews.

- The engagement with C40 in London has varied over the years with political priorities and personal motivation of the involved officials. It also varies depending on the “maturity” of thematic networks, and when objectives or actions have been achieved, priorities move elsewhere.
• The tightening of public finances has put a strain on London’s ability to engage in international forums, especially if travel costs are incurred. Financial contribution to travel has been essential for London officials to participate in overseas workshops and seminars.

• The importance of meeting physically was underlined as an important factor to create social capital, trust and to enable identification of common themes or causes to pursue. The friendly competition between cities is also seen as a key factor creating momentum and engagement towards climate actions.

• In London, most implementation of policy is outsourced, so the C40 work most relevant for the city concerns policy rather than technical expertise. This could sometimes lead to certain topics or areas of work being less relevant for London, in the exchange with other cities.

• The advice received from C40 and member cities is short and quick, and the city can ask for and receive input immediately from the network. This was seen as a positive and differentiating factor from other collaboration partners, where engagement typically is slower and more long-term based (as an example EU projects were mentioned, such as H2020) or collaboration with academia.

• The C40 network differs from other networks, such as ICLEI (of which London is not a member currently) as it is targeted specifically to megacities, which contributes to a cohesive network, since cities face the same challenges to a large extent.

• The staff in the C40 organisation was seen as an important contributing factor to the success of the network, e.g. the network managers and the regional director, and their capacity to create commitment and engagement from the cities.

London would most likely have had ambitious climate targets also without C40 engagement. It is not possible to estimate impacts in terms of GHG reductions achieved through C40 engagement in London, but according to interviewed city staff, the membership and involvement of the city in C40 has contributed to shaping policy implementation through sharing of experiences with other cities. Tangible direct results can be identified, such as a reduction of prices on hybrid buses, but it does not translate directly into GHG reduction per se. Still it clearly shows the added value C40 can bring to cities by pulling them together and identifying common causes.

**SUGGESTIONS FOR IMPROVEMENT**

• It was seen as very important for C40 to continue working on city diplomacy, in order to give cities a joint voice on the international arena. This was mentioned during interviews as one of the main benefits of C40.

• C40 should put more emphasis on trying to identify joint causes the cities can pursue together, such as the Clean Bus Declaration. This would further increase the value added of the network, by utilising the platform to further common agendas. This might entail opening up towards and engaging more with third party actors, such as private sector and/or academia.

• A need for more transversal work was mentioned, e.g. to work more on concepts such as SMART cities and circular economy, which cut across sectors and technical fields. According to interviewed staff, the current thematic network structure tends to create or sustain “silos” while there is a movement or ambition in cities to break down silos and work more integrated with mitigation and adaptation actions. It was also mentioned that C40 could possibly reach out and liaise with other networks or initiatives working in the field of circular economy.28

• There could be a stronger focus on monitoring and evaluation of cities engagement and actions in the C40, to evaluate the outcomes and contribute to building the knowledge base and learning on what works in the cities efforts to implement climate actions.

• C40 is perceived as an excellent “player” on the international scene, but was seen as less present regionally (e.g. at the European level). This was seen as a weakness, since much of what is implemented in EU Member States will have some relation to EU legislation or initiatives.

---

28 [https://www.ellenmacarthurfoundation.org/](https://www.ellenmacarthurfoundation.org/) was mentioned specifically
SOURCES

Interviews
- Andrew Richmond, Policy and Strategy Manager - Energy & Waste, interim C40 contact
- Simon Wyke, energy policy and energy delivery, involved in the Green Growth Network, District Energy and Carbon Positive
- Louise Clancy, strategic relationship with C40 and Private Building Efficiency network
- Elliot Treharne, Air Quality, is involved in the Low Emission Vehicle network
- Cassie Sutherland, adaptation, water and sustainable development. Her team will be involved in the Climate Risk Assessment, Connecting Delta Cities and Cool Cities networks
- Andrew Jones and Daniel Barrett, works on Smart and Green, interested in seeing how the networks can help support those agendas

C40 data
- C40 Network Outcomes Impact Reports (NOIR) Q1 2016
- Data collected for the Climate Action in Megacities report, http://cam3.c40.org/#/main/home

Other
- C40 website
STOCKHOLM, SWEDEN

<table>
<thead>
<tr>
<th>Population (metro)</th>
<th>0.9mn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayor</td>
<td>Karin Wanngård</td>
</tr>
<tr>
<td>GDP (US$)</td>
<td>143bn</td>
</tr>
<tr>
<td>Climate</td>
<td>Cold Continental; No Dry Season</td>
</tr>
<tr>
<td>CO2 Target</td>
<td>100% reduction by 2040 compared with 1990</td>
</tr>
</tbody>
</table>

OVERVIEW

Stockholm became member of the C40 Network in 2010. Before that Stockholm has a long history of working with climate change. Stockholm has been active in several different C40 sub-networks including taking the lead and being the go-to-city for the Low-Carbon Districts (LCD) network (previously known as Climate Positive (CP)). Within this network Stockholm was awarded an award for The Stockholm Royal Seaport.

CITY CLIMATE PRIORITIES

A climate smart Stockholm is one of the four main pillars of the city budget and is integrated and implemented in all city operations and all policy areas. Stockholm has a long track record of dedicated and successful mitigation work and has been able to decrease the GHG emissions by 47%/capita since 1990 and is dedicated to follow that path and become fossil fuel free by 2040.

The Stockholm Environment Program 2016-2019 covers both mitigation and adaptation areas and specifies operational goals such as improving energy efficiency in municipal buildings by 10%, decreased traffic volumes and increased use of biofuels in transport. By 2020, the GHG per capita should be down to 2.3 tons per person. The Stockholm Climate Strategy for a Fossil Fuel Free Stockholm 2040 is an action plan for 2020 and identifies the remaining challenges and obstacles that the city, together with other stakeholders, need to face and tackle to become fossil fuel free by 2040. (Approval by the city council in autumn 2016).

Stockholm is one of the fastest growing capitals in Europe and the new City Plan will reflect the vision of a climate smart city in city planning and land use policy. New developments are concentrated to public transport hubs and pedestrians and bikes are prioritized for climate smart mobility and quality of life.

1 Billion SEK (120 M$) is dedicated for additional climate investments in the city budget 2015-2018.

A Climate Unit was established at the Executive Office in the City Hall in June 2016 and will coordinate the city climate actions on mitigation and adaptation, including the climate investments.

Stockholm’s climate goals relevant to C40 include:
- Delivering Stockholm Royal Seaport as a Climate Positive Development (LCD/CP)
CITY ENGAGEMENT IN C40

Stockholm had long worked with climate change, and was the Green Capital winner in 2010, after which a contact for membership was established with C40. Stockholm has been active in several different C40 sub-networks and relatively active in general. The city believes that the most active cities will be the cities that benefit most from the C40 Network. Stockholm has been the lead for the Low-Carbon Districts (LCD) network (previously known as Climate Positive (CP)), which means that they have been the initial go-to city and helping to set the focus of the sub-network. Now, Stockholm is more involved in the Land Use Planning (LUP) network, as they shift their focus toward the Walkable Stockholm Plan, accommodating new housing and maintaining the feeling of Stockholm.

The primary reason for why Stockholm participates in the C40 Network is in order to develop competencies, learn from other cities and create new relations. One of the advantages of the C40 Network is the friendly competition among member states in terms of striving for C40 awards.

Figure 15 Number of C40 interactions with other cities, by network – Stockholm (Q42013-Q42015)

As an example of Stockholm’s activity in the networks, The Stockholm Royal Seaport achieved an award for Stockholm in the Low-Carbon Districts network.

Overall the engagement in the different networks varies, depending on the network and format. Stockholm has talked with the regional director, on their considerations to focus on fewer networks and thus concentrate their efforts.

In Stockholm, the membership of the C40 Network is anchored at Executive Office/International Affairs Unit. However, the international work is delegated further, which means that it is up to the single department, unit or company to participate in webinars, meetings or other kinds of interactions.

Generally, Stockholm views the C40 Network structure as well organized: Stockholm is fully aware who to contact in specific situations and the network is easily contacted.

---

29 The LOG data includes all types of interactions: calls, conference calls, meetings (informal, formal, face-to-face), email exchanges, peer exchanges, webinars, and workshops.
CONTRIBUTION OF C40 SUPPORT TO CLIMATE ACTION

C40 is seen as a well-organised structure and with a high degree of political clout, compared to other networks. As a member, you get the feeling of “being part of something bigger”; you are not just a small city working on your own. The global context and outreach is seen as a unique and distinguishing feature of C40.

Some networks are more loosely organised and focus more on training, and others provide a staff resource. Also, it is noted that C40 perhaps is relatively more focussed on the external communication. An important feature of C40 is that cities are able to share experiences and learn from each other so that mistakes are not repeated. Another advantage of C40 is that it helps to drive the political awareness of and interest in climate action. Providing a form of international legitimacy C40 is perceived to help lay the road for more collaboration with the political level.

According to the CAM 3.0 data, Stockholm has engaged in 218 actions in total. Only a few of these, however, state whether the C40 Network contributed or not. The CAM 3.0 data shows that 3 actions were helped by C40 interactions and 1 action was helped by an interactions stemming from outside the C40 Network. 87 actions were reported to have been helped by neither the C40 nor other cities. The NOIR data suggests that Stockholm has engaged in 6 actions within the C40 Network, but none of those actions report any involvement of the C40 network.

Selected examples of actions performed within the C40.

**Improving energy efficiency in municipal buildings**
Stockholm has a goal within the Municipal Building Efficiency (MBE) sub-network to extend the efforts for improving energy efficiency in municipal buildings. By improving the data management for municipal energy efficiency efforts, among other things, Stockholm hopes to achieve general GHG emissions reduction of 100% by 2040. The city has a long-term aim to be fossil fuel free by 2040, and their short-term goal is to have 2.3 tons of carbon per inhabitant by 2020.

**Deliver the Stockholm Royal Seaport and ambitious low carbon sustainable development**
Within the Low-Carbon Districts (LCD) sub-network (formerly known as Climate Positive (CP)), Stockholm pursued the goals of establishing the Stockholm Royal Seaport as a Climate Positive development and also delivering ambitious low carbon sustainable development. Stockholm is creating the Climate Positive Roadman and implementing the strategy in order to achieve a net-carbon negative. Furthermore, Stockholm is implementing Stockholm’s Climate Action Plan to become fossil fuel-free by 2040 and planning for building a huge number of housing units in the city.

For both of the actions there has not been recorded any progress and the degree to which the C40 Network has been involved in carrying out the actions is unknown. However, the interviews point to the fact, that a clear strategy for how to reach the goals is absent and that the level of engagement suffers from this. Regarding the above mentioned actions this may influence the lack of progression.

**Key factors**
- According to Stockholm, a key factor for the C40 Network is not being specific with projects but more with general guidance and governance. When being a member of the C40 Network, member cities are incentivized to strive for more. Due to the friendly competition among members, the cities may become more ambitious.
- One of the key factors, according to Stockholm, is the possibility of getting best practice from other cities.

Climate change has been a political priority over the years, and Stockholm would most likely be committed to climate mitigation and adaptation without C40 membership. More politicians have committed over the years, and here the international cooperation has most likely been an influencing factor. For Stockholm C40 has not been the driving force for climate action in the city, as it has been a priority years before joining the network. C40 has helped to strengthen this political agenda even more and functions as a platform for sharing achievements pushing the international awareness of climate change forward. Stockholm wouldn’t have redone their calculations of emissions, had it not been a member of C40. But the chance to work with and benchmark with other cities made the case.
SUGGESTIONS FOR IMPROVEMENT

The interviews pointed to several ideas to consider going forward, spanning operational, tactical and strategic issues.

- Operational: A lot of effort goes into reporting, and a lot of data comes back, but it is not ready to use. Transparency in the used data is critical. As to the webinar, it may be a challenge to find a time slot that suits everybody. Also, the use of English as a working language can pose a challenge.

- Tactical: Stockholm is a developed city and is happy to share lessons learned with other cities. Also, it is important to understand context when sharing experiences. Stockholm suggests more general guidance when a city wants a specific structure established. For instance best practice on how a specific structure could be organized, who should do what and advantages/inconveniences with different approaches. As opposed to best practice on which projects to approach, best practice on how to approach, finance, handle, organize and structure approaches is needed. As to the city organisation, the decentralised engagement is highlighted. It is crucial to engage and involve as many as possible around the city – which also includes external stakeholders.

- Strategic: C40 is organised in workgroups, but challenges are cross-cutting. It could be worthwhile for C40 to design a coherent strategy for which goals the cities should meet – and how and why. C40 needs to take a coherent view. Furthermore, it’s important to follow closely potential overlaps with other networks. It’s important to realise that cities differ. Stockholm’s biggest challenge when it comes to emissions is transport, as energy production is already, to a very large extent, based on renewables. The need to engage the political level is underlined. Potential ideas to consider include study trips for mayors.

SOURCES

Interviews
- Malin Parmander, Acting Head of International Affairs, Executive Office/International Affairs Unit
- Gustaf Landahl, head of environmental department,
- Magnus Ljungkvist, Senior Political Advisor for the Mayor
- Linda Persson, Climate Strategist, Strategic Urban Development
- Staffan Lorentz, Project director
- Christina Salmhofer, Sustainability manager

C40 data
- C40 Network Outcomes Impact Reports (NOIR) Q1 2016
- Data collected for the Climate Action in Megacities report, http://cam3.c40.org/#/main/home

Other
- C40 Network website: www.c40.org