

# Planning for Sustainable Urban Consumption

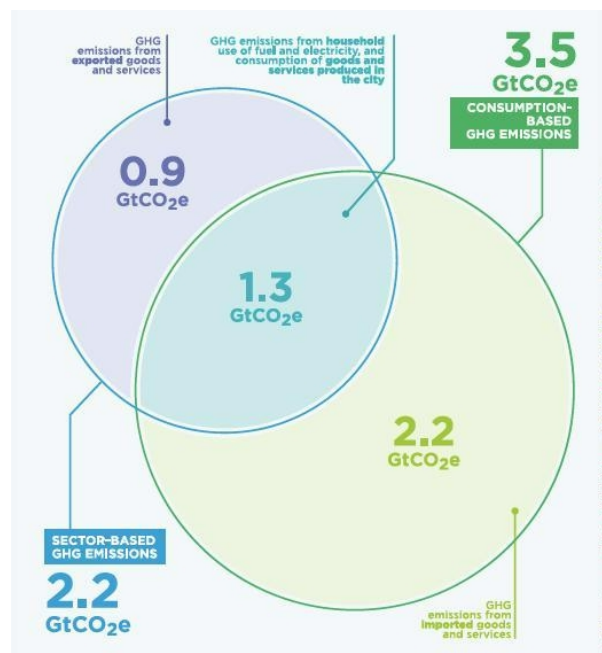
In 2018 C40 Cities Climate Leadership Group (C40) started work to support our cities to reduce the GHG emissions associated with urban consumption. This proposal builds on C40's existing work to set up a pilot programme to support the cities of Copenhagen, Helsinki, Oslo and Stockholm to develop consumption-based emissions reductions roadmaps for three key urban sectors: construction, food and public procurement. This is conducted as a partnership with leading Circular Economy organisation the Ellen MacArthur Foundation.

## 1. Introduction

**The wide sphere of city influence:** C40 cities and their mayors are leading the world on climate action, while increasing the health, wellbeing and economic opportunities of urban citizens. Most mitigation activity to date, including C40's commitment to ensure all C40 cities can deliver on the goals of the Paris Agreement, is focused on *in-boundary* GHG emissions. These are emissions that arise from energy use in buildings and vehicles within the city boundary (scope 1) or from the consumption of grid-supplied electricity, heating and/or cooling (scope 2). This is consistent with the sector-based accounting approach adopted by the IPCC and used by national governments around the world.

As the focal point for the global consumer economy, however, the influence of cities and the decisions made in them goes far beyond city boundaries. For instance, goods, products and materials consumed in a city can result in significant emissions at the place of manufacture, which is often outside the city boundaries (scope 3). Indeed, more than 75% of global natural resources are used to provide for city consumption<sup>1</sup>. A consumption-based approach to measuring GHG emissions captures both direct (scope 1 and scope 2) and lifecycle GHG emissions of goods and services (scope 3, including those from raw materials, manufacture, distribution, retail and disposal) and allocates GHG emissions to the final consumers of those goods and services, rather than to the original producers of those GHG emissions. GHG emissions from visitor activities as well as goods and services produced within the city boundary, but exported for consumption elsewhere, are excluded.

**Climate change and urban consumption:** A C40 study of 79 member cities shows that the consumption-based GHG emissions of C40 cities are significantly larger than sector-based GHG emissions.



<sup>1</sup> <https://www.wrforum.org/10yfp-strengthening-sustainable-consumption-production-patterns-sustainable-cities-lifestyles/>

Total GHG emissions rise by 60% to 3.5 GtCO<sub>2</sub> when using a consumption-based approach<sup>2</sup>, two-thirds of which is imported from regions outside the cities.

80% of the C40 cities included in the study have larger consumption-based GHG emissions than sector-based GHG emissions. For some cities in the Global North, this increase is as steep as 900%. This reflects both the level of consumption in cities, and the global nature of supply chains of the goods and services used by cities. At an individual level, most C40 cities in Europe and North America have a consumption-based GHG emissions level between 10 – 20 tCO<sub>2</sub>e/capita.

## 2. Opportunity for action

This research shows unequivocally that the impact of C40 cities on global GHG emissions stretches far beyond their physical boundaries. The twin factors of urbanisation and economic development are likely to exacerbate this, and further increase the volume of GHG emissions embedded in city supply chains. Urgent and transformative action is therefore required to reduce the impact of urban consumption. By addressing the impacts of urban consumption, in addition to continuing to target sector-based GHG emissions, C40 cities will have a much greater impact on reducing global GHG emissions. Additionally, most other environmental concerns such as biodiversity loss, ocean plastic, and land use change are heavily linked to consumption.

Taking action on consumption-based GHG emissions will also deliver significant benefits for local citizens and businesses. For instance, the provision of healthy, locally sourced plant-based food, with local valorization of waste streams, will deliver huge health benefits and foster local employment and community cohesion, as well as driving GHG emissions reductions. C40 is currently working on research to quantify these benefits for C40 cities. However, Amsterdam's Circular Strategy estimates that implementation of material re-use strategies has the potential to create €85million of value per year and 700 additional jobs within the construction sector, and €150million of value per year and 1,200 additional jobs in the agriculture and food processing industry<sup>3</sup>. An assessment done by London as part of the development of the city's Circular Economy Route Map has found that transitioning towards a circular economy could provide London with a £7 billion net benefit annually, as well as create 12,000 net new jobs in the city in the re-use, remanufacturing and material innovation sectors<sup>4</sup>. Furthermore, the Ellen MacArthur Foundation estimates that by 2025, compared with the current development path, the EU could increase GDP by an additional 7% by adopting a circular approach<sup>5</sup>.

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<sup>2</sup> C40 (2018) Consumption-based emissions of C40 cities. Available at <https://www.c40.org/researches/consumption-based-emissions>

<sup>3</sup> <https://www.circle-economy.com/case/developing-a-roadmap-for-the-first-circular-city-amsterdam/#.WyzQjhJKigw>

<sup>4</sup> London Circular Economy Route Map

<sup>5</sup> <https://www.ellenmacarthurfoundation.org/publications/achieving-growth-within>

Addressing consumption-based GHG emissions offers huge opportunities for cities to use their policy-making powers to influence a more efficient, less wasteful, inclusive and sustainable global economy. The aforementioned C40 study (see figure on the right) identified the following sectors as making the most significant contribution to consumption-based GHG emissions: utilities, capital, transportation, food and government services.

GHG emissions from utilities and (in-boundary) transportation are already comprehensively addressed through existing city-level climate action plans and support programmes.

The three sectors where the potential for GHG emissions reductions at the city level is strongest thus are:

- **Construction**
- **Food**
- **Government procurement.**

All three are among the most significant in terms of a typical C40 city’s consumption emissions profile, and, crucially, they are also sectors where city administrations have significant power and capacity to act and influence GHG emissions through local level policy, legislation and regulation.

Therefore, C40 intends to focus the **Sustainable Urban Consumption Programme** on emissions arising from these three key sectors.



## Sustainable Urban Consumption Programme

The ambition of the Sustainable Urban Consumption Programme is to combine strong mayoral leadership, technical assistance and market/stakeholder engagement in order to deliver swift and comprehensive action to reduce GHG emissions from the supply chains servicing cities. C40’s successful model of delivery follows five distinct phases – prove, plan, commit, implement and disseminate:

1. **Prove** – The “*Consumption-based GHG emissions in C40 cities*” study developed consumption-based GHG emission inventories for C40 cities, broken down by sector and product category. C40, in partnership with Arup and Leeds University, is now building on this research to develop science-based targets and indicators for cities to reduce their consumption-based GHG emissions in line with

the goals of the Paris Agreement. This work will also highlight those actions which lead to impact in the form of emissions reductions, and explore the capacity of different urban stakeholders to drive such actions. Due for publication in early 2019, this piece of research will provide the necessary evidence and frameworks to support a programme to address consumption-based GHG emissions in specific cities.

2. **Plan** – The next step is to use the above research to support each participating city to produce sector-specific roadmaps that identify opportunities for local government, in partnership with other stakeholders, to reduce consumption based GHG emissions. These *Sector-specific Sustainable Urban Consumption Roadmaps* will outline pathways to reduce the carbon-intensity of urban supply chains. As mentioned above, this will complement and support work that cities are already doing on in-boundary GHG emissions.
3. **Commit** – Following the completion of the roadmaps, we will look for cities to publicly commit to specific delivery outcomes outlined in each roadmap, e.g. procurement of low carbon concrete or sourcing food products with a lower carbon footprint in public institutions. The exact commitments will be specific to each city, but will focus on key short- and mid-term targets to ensure that cities are spurred to take action quickly. An example of this approach is the Green and Healthy Streets Declaration, where a number of C40 cities have committed to: *procuring only zero-emissions buses by 2025; and ensuring a major area of their city is zero emissions by 2030.*<sup>6</sup>
4. **Implement** – C40 and EMF will support cities in taking their identified actions through to implementation via a range of mechanisms including: market building initiatives, financing advice, pilot studies, peer-to-peer exchanges and technical assistance.
5. **Disseminate** – Sharing of project outcomes and lessons learned will focus both on cities within the C40 network as well as those not part of C40. There are more than 4,000 cities with a population of over 100,000 people. Through partners such as the Global Covenant of Mayors for Climate and Energy, C40 will ensure that the lessons learned and successes from the programme are available for the rest of the global urban community to benefit from.

### 3. Planning for Sustainable Urban Consumption

With the first of these 5 phases already well underway, C40 is proposing to move into phases 2 and 3, by establishing a pilot *Sustainable Urban Consumption Planning Programme*. Focusing in the first instance on four high ambition cities, the pilot aims to demonstrate and test the potential, opportunities and benefits of addressing consumption based GHG emissions. The programme aims to inspire and catalyse other C40 cities and those beyond the C40 network to follow the same ambitious course.

#### 3.1 Cities

The main criteria for inclusion in the pilot programme are: High consumption levels; advanced existing climate action plans and ambitions; and, most importantly, a city authority with a high capacity for engaging with the pilot programme as well as the firm political will to do so.

The Nordic capitals - Copenhagen, Helsinki, Oslo and Stockholm – fit the inclusion criteria perfectly, as cities that are renowned for their existing climate ambitions and achievements, but also have very high consumption levels.

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<sup>6</sup> <https://www.c40.org/other/fossil-fuel-free-streets-declaration>

C40 has discussed the programme with city contacts in the cities of Copenhagen, Oslo and Stockholm and they have all expressed willingness to join the pilot.

Additionally, it is deemed that creating a Nordic pilot programme will carry significant potential for harvesting synergies. This is due to the similarities between the cities’ profiles, their experience with cooperating with each other and their close physical proximity.

### 3.2 Key Tasks

C40 proposes setting up a two-year programme:

- Year 1 will focus on supporting cities to develop sector-specific Sustainable Urban Consumption roadmaps
- Year 2 will focus on supporting cities begin to implement actions identified in the sector-specific Sustainable Urban Consumption roadmaps

### 3.3 Delivery

The first task will be to establish a programme management office to set up, oversee and manage the programme, across the four participating cities. To support cities to develop roadmaps, C40 will procure expert consultants to provide bespoke technical support. This will include: supply chain analyses, stakeholder mapping and engagement, market analyses, action identification and prioritization, and impact assessments. To complement the delivery of technical assistance, C40 will organize two workshops for participant cities and other key stakeholders to share experiences and discuss the opportunities and challenges involved in developing (and delivering on) the roadmaps.

Once completed, participant cities will be expected to make a public commitment to delivering the actions identified in their roadmap, before moving on to the implementation phase which will be the focus in Year 2.

In year 2, much of the programme manager’s capacity will be focused on integrating the cities and their projects within existing C40 offerings, such as peer-to-peer city networks, the C40 City Finance Facility, the Benefits Research programme, the Inclusive Climate Action programme, and provide ongoing mechanisms for cross-sector collaboration with our partners.

#	Component	Year 1	Year 2
1	Technical assistance	✓	
2	Workshops	✓	
3	Roadmaps	✓	
4	Declaration	✓	
5	Implementation support		✓
6	Case studies		✓

### 3.4 Timeline

The work for Year 1 will aim to start in Q2 2019 and will be completed by the early 2020.

### 3.5 Budget requirements

Component	Unit cost (USD)	Units	Total cost (USD)
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C40 programme manager	95,000 / year	2x	190,000
Technical assistance	150,000 / city	4x	600,000
Workshops	20,000 / workshop	2x	40,000
Partner engagement, communications and travel	10,000 / city	4x	40,000
SUB-TOTAL			870,000
Overhead costs (15%)			130,000
<b>TOTAL</b>			<b>1,000,000</b>

Based on the costs outlined above, delivering pilot programme for four cities would be **USD 1,000,000**.

#### 4. Why C40

C40 connects 96 of the biggest and most innovative cities globally. Cities often face similar challenges across the world and C40 offers an effective forum where they can collaborate, share knowledge and drive meaningful, measurable and sustainable action on climate change.

Because city leaders usually have authority over the systems that create the most carbon emissions, like transportation, buildings and waste, they can act boldly to address climate change and protect the residents of their cities. And even in areas where mayors have limited power, by collaborating with other cities and non-state actors, cities are able to deliver transformative actions.<sup>7</sup>



Working across multiple sectors and initiative areas, **C40 convenes networks of cities providing a suite of services in support of their efforts, including: direct technical assistance; facilitation of peer-to-peer exchange; and research, knowledge management and communications.**

<sup>7</sup> C40, 2015. Powering Climate Action: Cities as Global Changemakers: [https://c40-production-images.s3.amazonaws.com/other\\_uploads/images/295\\_Powering\\_Climate\\_Action\\_Full\\_Report.original.pdf](https://c40-production-images.s3.amazonaws.com/other_uploads/images/295_Powering_Climate_Action_Full_Report.original.pdf)



“ As mayors, we all face similar challenges and have to innovate to solve them, often in the same ways. The C40 network connects us all, enabling us to share ideas and collaborate, working together towards a greener, healthier future.”

Anne Hidalgo, Mayor of Paris and C40 Chair



C40 has been particularly successful in creating a political platform which motivates mayors and creates momentum for climate action. Based on results of an external organisational review conducted between April – September 2016, evaluation findings suggest that membership in C40 brings value to cities’ climate work, through the exchange of experiences and the exposure provided to the cities celebrating their successes, giving cities a voice at the global stage. Annual C40 City Satisfaction Surveys show consistent city satisfaction with C40 membership above 95%.

C40 is a thought leader and influencer in the field of climate change and cities, as recognized by leading organizations like the IPCC, UNFCCC and Mission2020. It has a strong evidence base, technical capabilities and knowledge, and a recognised, successful model to support its member cities in becoming sustainable, resilient and low carbon cities.

C40 cities are able to introduce innovative governance relationships and technologies, test financing mechanisms and pioneer more ambitious actions in a way that other smaller, fast growing cities cannot. These lessons and newly developed transformational practices can then be shared with the rest of the world’s cities. As pioneering leaders across the world, the C40 cities can amplify the impact of breakthroughs and successes within the C40 network.

## 5. City Role in Year One

This program will be delivered through a partnership between C40, the pilot cities, EMF and also ultimately other local stakeholders needed to ensure success. This section outlines the role of the pilot cities.

### 5.1 Involvement of city staff

The main enabler for this program is engaged and consistent involvement of city staff, supported by clear political leadership on this issue. Therefore it is key that the city provide clear commitment to both years of the program and its core outputs, confirmed through a mayoral letter. It is also key that clear indication be given to city departments and staff that this is a political priority. However most important element is to ensure a city staff member is allocated to coordinate the program from the city side, who’s role it is to coordinate and drive forward the work from the city side.

### 5.2 Specific city engagement by task

Specifically across the various project tasks in year one, the core engagements for the city will be as outlined below. C40 is confident if the above staff involvement is provided these tasks can be adequately delivered:

- Collaborate with project team on assessing whether there is any locally available data to enhance consumption emissions inventory. In the case of Helsinki this inventory will need to be developed using C40 existing approach, likely to take 2-3 months.

- Support an engagement process across the city authority, including key city departments to co-develop priorities from food or construction. Identify leads from each relative department and identify political priorities for action.
- Support and stakeholder influence mapping across the city, and to support technical team in engaging and consulting with other stakeholders in the city to assess business and citizen influences too.
- Engage in peer to peer interactions with other C40 cities through our Buildings and Food Networks, both to ensure that pilot cities get access to best-practice and lessons learned from other cities, but also to share and inspire those other cities in through the work underway in the pilot.
- Work with C40 and technical partners to developed a technical review identifying key outcomes for the city to work on for reducing consumption emissions, such as reducing food waste, increasing the proportion of plant based foods, or shifting to lower impact building materials.
- Agree measurement and verification approach for these outcomes, and start to put in place measures for their assessment.
- Support C40 in developing city specific analysis on the wider benefits of action on consumption, and take a lead in promoting them to citizens.
- Engagement with international supply chain through mechanisms established with the business groups working with the Ellen MacArthur Foundation.
- Crucially, lead on identification of and engagement with local stakeholders necessary to select and deliver the actions needed. This will include local business, citizens and civil society. This will aim to ensure there is buy-in and ownership amongst the relevant stakeholders for the actions outlined in the roadmap.
- Collaborate to author and publish a roadmap report, outlining the work that's been done, framing a long-term vision for a zero-carbon consumption city (though not necessarily political commitments at this stage, due to the wide range of stakeholders on which delivery depends) and making public announcement about involvement in the program.

### **5.3 City Specific Resources**

The total third party and C40 costs associated with each city are around \$250k USD per year. This is to cover costs of technical assistance (\$150k), C40/EMF support (\$50k) and the rest for travel and workshops (around \$20k) and the rest associated overheads.

## **6. Invitation to Helsinki**

C40 would be delighted to invite Helsinki to partake as a pilot city on exactly the same basis as the three C40 member cities, engaging with the C40 networks, participating in events, and benefiting from positive communications by C40.