New Research Shows How Urban Consumption Drives Global Emissions

Strong action from mayors, business and citizens is driving down emissions created locally. But emissions from urban consumption of goods like food and clothing, along with materials used to construct urban buildings, are set to double without action.

Emissions due to consumption in high-income cities must be reduced by two-thirds in the next decade to avert the climate crisis. Doing so would save hundreds of thousands of lives and generate billions in savings.

London, UK (12 June 2019) -- New ways of measuring the climate footprint of urban areas to include consumption - what urban business and citizens use, eat, and wear, and how these things are made and transported - show that actors in global cities have a greater influence over global emissions than we previously thought.

Research released today by C40 Cities finds that consumption-based emissions from nearly 100 of the world’s big cities already represent 10% of global greenhouse gas emissions. Without urgent action, those emissions will nearly double by 2050. The study reveals an incredible opportunity for cities and their citizens to contribute even more to the global effort to cut emissions and address the climate emergency.

The new research, The Future of Urban Consumption in a 1.5°C World, was produced in partnership with Arup and the University of Leeds, and cautions that urban consumption-based emissions must be cut by at least 50% by 2030 in order to maintain the possibility of keeping global temperature rise below 1.5°C.

When combined with firm city efforts to reduce local emissions, this would allow cities to deliver 35% of the emission savings needed to put them on a path to 1.5°C.

High income areas, which generate the bulk of emissions, need to cut their emissions much faster -- two-thirds by 2030. Fortunately, the research finds that if nations, business, cities and citizens take ambitious climate action over the next 10 years, cities will be on track to reduce their emissions in line with a 1.5°C world.

“Stopping the climate crisis requires keeping global temperature rise to below 1.5°C above pre-industrial levels. Transforming the global economy to deliver on that goal will require action on a scale never seen before in peacetime. Everything and everyone will have to change, but the first step is understanding what needs to be done. This research clearly demonstrates that changing the way we consume could make a significant contribution to cutting emissions,” said Mark Watts, Executive Director of C40 Cities. “This is a wake-up call for all leaders, business, and citizens to
consider both the local and global climate impact of the things they consume, and an opportunity to better engage citizens and businesses in solving the climate emergency.”

Cities Already Leading the Way

Mayors are already leading the response to the climate emergency by setting science-based targets compatible with keeping the global temperature rise to 1.5°C, and they are taking impactful action to reduce local emissions from buildings, energy, transport and waste. 27 C40 cities have already peaked their production emissions - those emitted locally.

However, the C40 network represents one-quarter of the global economy, and 85% of the emissions associated with goods and services consumed within their boundaries are imported from elsewhere.

The place to start is with those who consume the most. To reach the reductions needed, high-income urban areas must reduce the climate impact of consumption by two-thirds within the next decade, while rapidly developing economies must adopt sustainable consumption patterns as they continue to grow. Many C40 citizens still don’t consume enough to meet their basic needs, so ensuring a just transition, and that reduction of consumption-based emissions is fair, will be crucial.

Addressing Consumption-Based Emissions in Six Sectors

The report explores six sectors where leaders, businesses, and citizens in the world’s cities can take rapid action to address consumption-based emissions: food, construction, clothing, vehicles, aviation, and electronics. There is significant potential to cut consumption-based emissions in these sectors.

Together these actions would save around 1.5 GtCO$_2$e per year by 2030. When combined with existing city climate commitments, this would deliver 35% of necessary reductions in consumption-based emissions needed to put C40 cities on a 1.5°C trajectory. This shows that mayors, business and citizens can together make a big difference on consumption. Specific opportunities for cities include:

- **Food:** Mayors, business, and citizens in C40 cities could together take actions to reduce consumption-based emissions from food by an average of 31-37% by 2030, depending on the target level, by moving to a plant-based diet, eating healthy quantities and avoiding waste. Actions might include “meat free Mondays” at schools and public buildings, community gardens to encourage activity, local cohesion, and healthy diets, regulation to prevent excessive targeting of children for fast food, or supporting healthy food retailers to avoid food deserts where citizens have to travel long distances to get quality healthy food. This could help reduce meat consumption to a maximum of 16 kg per person per year and dairy to 90 kg per person per year, down from an average of 58 kg of meat and 155 kg of dairy at present, and eventually to even lower levels of consumption that can further reduce emissions.
• **Construction**: Mayors, business, and citizens in C40 cities could together take actions to reduce consumption-based emissions from buildings and infrastructure by 26% by 2030.
  
  ○ Regulations and incentives to use less building materials could reduce steel and cement use by 35% and 56%, respectively.
  
  ○ Ensuring all buildings are being used to their full capacity could lead to a 20% reduction in the need for new buildings.
  
  ○ Switching to lower-impact materials such as sustainable timber (as a part replacement for concrete) is needed for 90% of homes and 70% of offices being built.

• **Clothing**: Mayors, business, and citizens in C40 could together take actions to reduce consumption-based emissions from clothing and textiles by 39% by 2030 through interventions such as encouraging new clothing business models focused on recycling, upgrading, renting, and reuse of clothes. This would allow a reduction in new items of clothing to as low as 3 per person, per year, and reduce waste, costs, and impact. A 75% reduction in supply chain waste will also be needed to realise the full emissions reduction potential.

• **Vehicles**: Mayors, business, and citizens in C40 cities could together take actions to reduce consumption-based emissions from private transport by 28% by 2030. This could be through interventions reducing and eventually nearly eliminating the need for car ownership, which would reduce costs and free up space on the streets for people. This could be achieved by strengthening public transport or making shared or hire car access in cities easy and cost-effective. Cities can also work with manufacturers in maximizing car lifespans and increasing materials efficiency.

• **Aviation**: Mayors, business, and citizens in C40 cities could together take actions to reduce consumption-based emissions from aviation by 26% by 2030. Part of this will be delivered by technology interventions, such as sustainable aviation fuel. However, since this will take time to reach maturity, in order to deliver the necessary carbon targets, there must be an average 28% reduction in the number of flights across C40 cities. The greatest reductions would be required where flying is most common. Such a convergence would help ensure climate-safe travel for all, rather than just a small proportion of the world flying extensively and most not at all. This can be facilitated through providing viable alternatives like affordable high-speed rail.

• **Electronics**: Mayors, business, and citizens in C40 cities could together take actions to reduce consumption-based emissions from electronics and consumer goods by 18% by 2030 by prolonging the lives of products ideally for at least 7 years, saving money and waste. This could be accomplished through interventions such as community workshops to repair electronics and appliances or “tool libraries” where tools can be borrowed only when needed.
Addressing consumption-based emissions will be a key objective when city leaders from across the globe gather to lead the way towards bold and concrete climate actions at the C40 World Mayors Summit, being held in Copenhagen from October 9-12, 2019.

Benefits from Reducing Consumption-Based Emissions

The changes to current consumption patterns that need to be delivered in the world’s urban centers are in some cases dramatic, but individuals, businesses and city governments all stand to gain if the changes are delivered in the right way.

Benefits of reducing consumption-based emissions include:

- A high-income, dense city like London could save more than $11 billion over the next 5 years by optimizing efficiency and use of existing buildings and avoiding new construction.
- 170,000 deaths per year could be prevented in total across C40 cities if residents eat less red meat and more vegetables and fruit.
- 170 million m² of on-street parking could be released back to the public realm in C40 cities, accommodating 2.5 million trees and 25,000 km of cycle lanes by reducing private vehicle ownership.
- Residents in C40 cities could save $93 billion by consuming clothes and textiles differently.
- $70 million in damages to human health, buildings and infrastructure could be avoided in C40 cities by reducing flights and adopting sustainable aviation fuels.
- A global transition to clean production will make the world safer and greener, and research suggests that it will generate more net jobs than it will replace over time.

A Pathway to Closing the Emissions Gap

Mayors, national governments, business, and individual consumers must work together on immediate and ambitious action to decarbonise global supply chains, shift to sustainable consumption practices, and transition to a low-carbon economy. Updating national targets to initiate an accelerated transformation of global production with increased decarbonisation of electricity, energy efficiency, shifts to low-carbon fuels in our buildings and transport, and less carbon-intensive industrial processes (particularly cement, steel and petrochemical manufacturing) will deliver 95% of the necessary reductions by 2050.

“As the scientific evidence mounts, it’s clear that we all must do more and with greater urgency, to reduce emissions and mitigate the threat of climate change, said Ben Smith, Energy and Climate Change Director, Arup. “Mayors in the C40 Cities network are well placed to provide leadership on this and we think that a focus on consumption-based emissions can be helpful in promoting collaboration.

“This report focuses on key actions to reduce consumption-based emissions in C40 cities. All of us, from city leaders and businesses to individuals, have important roles to play by developing policies, regulations, incentives and promoting behavioural changes.

“The actions in the report are ambitious and challenging, but bold action is necessary.”
"There is a growing consensus, based on compelling evidence, that we face a climate crisis and rapid action to reduce greenhouse gas emissions is a necessity," said Professor John Barrett, Chair of Sustainability Research at the University of Leeds. "Cities have a unique opportunity to deliver mitigation options in addition to national action. Cities can clearly reduce their direct emissions from heat, electricity and mobility inside the city as well as reduce the emissions that occur outside the city due to its residents’ consumption patterns. This report documents the carbon footprint of key global cities as well as analyses a range of strategies and policies that can be implemented at the city level."

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About C40 Cities
Around the world, C40 Cities connects 94 of the world’s greatest cities to take bold climate action, leading the way towards a healthier and more sustainable future. Representing 700+ million citizens and one quarter of the global economy, mayors of the C40 cities are committed to delivering on the most ambitious goals of the Paris Agreement at the local level, as well as to cleaning the air we breathe. The current chair of C40 is Mayor of Paris Anne Hidalgo; and three-term Mayor of New York City Michael R. Bloomberg serves as President of the Board. C40’s work is made possible by our three strategic funders: Bloomberg Philanthropies, Children’s Investment Fund Foundation (CIFF), and Realdania.

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