BENEFITS OF URBAN CLIMATE ACTION

Research Summary - Winter 2021
The aim of this document is to describe the current portfolio and resources produced by the Benefits team at C40 Cities.
Cities have a leading role to play in averting the climate crisis. Although urban areas only occupy 2% of the world’s land, they account for more than 70% of global CO2 emissions. Cities are also extremely vulnerable to the impacts of climate change and are increasingly exposed to hazards such as extreme heat, flooding, rising sea levels and powerful coastal storms.

At the current rate, the global average temperature is set to exceed 1.5°C above pre-industrial levels, between 2030 and 2052. To limit global temperature rise to below 1.5°C and avoid the most significant climate change impacts, global emissions must be significantly curbed. This requires an immediate and steep decline of cities’ GHG emissions by moving away from business-as-usual emissions scenarios.

This demands ambitious and transformative actions from all cities. The time for action is now, as measures can take immediate and steep decline of cities’ GHG emissions by moving away from business-as-usual emissions scenarios. These planning and policy making processes can be made more efficient if there is a greater understanding of the synergies between them. Integrated development approaches, which simultaneously advance multiple benefits across the three dimensions of sustainable development, can ensure that resources are invested efficiently to maximise the synergies between various development priorities, of which climate change mitigation is one.

The potential synergies between climate change mitigation and adaptation and other development objectives at the city level are numerous, and dependent on local context. Through these synergies, the climate change mitigation and adaptation agenda is increasingly being seen as an opportunity for cities and national governments, rather than a burden.

Understanding and harnessing the wider benefits of climate action will allow cities to tackle multiple issues at once, delivering urban development that provides more liveable and low carbon cities. Los Angeles Green New Deal delivers a new generation’s climate action plan that shows the impact of the plan on Angeleno communities’ jobs, workforce development, access and equity, affordability, health and wellbeing.

Climate change mitigation is sometimes perceived to be in conflict with the development agenda. Such concerns are often founded on the observation that historically, greenhouse gas (GHG) emissions were coupled with economic development. However, recent data shows that furthering economic development was not dependent on increasing GHG emissions: global trends for GHG emissions and GDP growth were decoupled in both 2015 (Olivier et al. 2016) and 2016 (IEA, 2016a).

The misconception that the climate agenda represents a burden to the development agenda may also arise from the understanding that resources which are spent on measures for climate action entail significant opportunity costs, in that they are not available for other uses. This perception derives largely from the fragmentation of sustainable development issues; climate change planning, in particular, is often a process which is fragmented from planning for other development objectives at the national and subnational level. Measures for the decarbonisation of the economy are often planned and assessed in isolation. These planning and policy making processes can be made more efficient if there is a greater understanding of the synergies between them. Integrated development approaches, which simultaneously advance multiple benefits across the three dimensions of sustainable development, can ensure that resources are invested efficiently to maximise the synergies between various development priorities, of which climate change mitigation is one.

Understanding and harnessing the wider benefits of climate action will allow cities to tackle multiple issues at once, delivering urban development that provides more liveable and low carbon cities. Los Angeles Green New Deal delivers a new generation’s climate action plan that shows the impact of the plan on Angeleno communities’ jobs, workforce development, access and equity, affordability, health and wellbeing.
The C40 research report, Unlocking Climate Action in Megacities (C40-Arup Partnership, 2015), identifies the leading six challenges preventing action. Making the case for action is one of the main challenges, as climate change is often seen as competing with a range of more immediate and tangible issues, such as a lack of affordable housing, poverty, unemployment, and poor health. Without a holistic and persuasive case that articulates how climate action contributes to these priorities, it is challenging to attract the support required.

In order to meet the challenges posed by climate change, cities need to take bold action at a large scale. C40 supports cities in making the case for ambitious climate action by harnessing the wider benefits on health, equity, economy and security – in areas such as energy, transport, buildings, urban planning and adaptation. The Benefits research team works to frame how to measure the benefits of climate action, develop modelling tools, and sharing the experience of cities worldwide.

C40 Research team undertook ground-breaking research to develop and test a standard approach to measuring the benefits of climate action. The framework shows how city priorities, climate action and social, economic and environmental benefits interlink and can be modelled through a causal chain.

The C40 Global Mayors COVID-19 Recovery Task Force advocates for a post-COVID stimulus that supports a green and just recovery - one that is consistent with limiting global heating to below 1.5°C while reducing urban air pollution and supporting job creation.

To provide decision-makers with more information on how stimulus packages may affect cities, this report compares how urban greenhouse gas emissions, health and jobs could fare under a green and just recovery compared to a return to a pre-COVID business-as-usual scenario, or a scenario where the world opts to spend stimulus funding on a high-carbon recovery.

So far, national decision-makers have opted for a high-carbon recovery. To date, only 3 - 5% of an estimated US$12 - $15 trillion in international COVID stimulus funding is committed to green initiatives. This means that almost all of the current COVID stimulus funding is propping up a high-carbon recovery - likely leading us toward catastrophic climate change and missing an unprecedented opportunity for change. The C40 Mayoral Task Force urges decision-makers to reconsider and invest in lower emissions, cleaner air and more jobs.

This research also shows that the timing of a green and just recovery matters, and presents a clear case for early investment. Modelling of the impacts of an ‘accelerated green recovery’ where faster capital investment enables accelerated climate action over the next five years, compared to a ‘slow green recovery’ where action happens at a slower pace over 15 years, shows that:

- An ‘accelerated green recovery’ could lead to half the per capita greenhouse gas emissions of a ‘slow green recovery’ by 2030, meaning that an ‘accelerated green recovery’ provides C40 cities with a greater chance of meeting their climate commitments and limiting global heating to 1.5°C.
- An ‘accelerated green recovery’ could avert almost twice as many premature deaths (1.8 times as many) due to air pollution between 2020 and 2030, compared to a ‘slow green recovery’.

Capital investments that are made early on under an ‘accelerated green recovery’ could create over 80 million good, sustainable jobs by 2023, across the nearly 100 cities in the C40 network and their supply chains - more than double a ‘slow green recovery’. At a time of mass unemployment and economic hardship in many parts of the world, generating jobs now will benefit millions of families.

Read our global research here, and our Canada focus here.

A just and green economy in Canada would:

- Reduce greenhouse gas (GHG) emissions by two-thirds by 2030 compared to a business-as-usual scenario, making it possible for Canada to deliver on its commitment to help prevent a global temperature rise above 1.5°C.

- Reduce air pollution by as much as 32% in major Canadian cities over the next 10 years, which could prevent up to 3,950 premature deaths.

Support and create more than 2.9 million good, sustainable jobs by 2030 across 12 major Canadian cities and their supply chains.

Deliver wider economic benefits of more than CAD 37 billion over the next 10 years from premature deaths averted by improving air quality and encouraging active mobility measures across major Canadian cities.
Library of tools to evaluate the Benefits of climate action

Drawing on the existing evidence base and working with leading experts, we developed methodologies to enable cities to quantify the health and economic benefits of climate and air quality action. The tools and learning materials are tested by cities to ensure their usability worldwide.
Globally, estimates show that 7 million premature deaths every year are caused by ambient (4.2 million deaths) and household (3.8 million deaths) air pollution (WHO, 2019).

C40 Cities has worked with 30 cities in collaboration with BuroHappold, London School of Hygiene & Tropical Medicine (LSHTM) and Cambridge Environmental Research Consultants (CERC) to develop a methodology to enable cities to effectively and efficiently undertake a rapid assessment of the health benefits of climate and air quality actions on transport, buildings, industry and energy:

- **Reduction in air pollution**
- **Premature deaths avoided per year**
- **Life years gained**
- **Increase in life expectancy**
- **Reduction in respiratory and cardiovascular hospital admissions**
- **Value of avoided deaths**
- **Healthcare costs savings**

### RESOURCES:

The tool and learning material are available on demand, in English or Spanish. Several tools are available based on the level of granularity and number of actions assessed by the city. The BUCA tool (2017) gives a quick assessment of single city actions at a high level, while the Pathways AQ tool (2021) gives a comprehensive assessment of a climate action plan’s impact on air pollution, but requires significantly more data and time to use.

Call to action: If all C40 cities achieved clean transport, buildings and industry, underpinned by a decarbonised grid, PM2.5 levels in these cities would drop by 49% on average, while reducing their GHG emissions by a significant 87%. This could save 223 million lives from improved air quality, each year.

Thirty participating C40 cities have trialled the methodologies and proposed ambitious measures for the transport, buildings and energy sectors that tackle both air pollution and GHG emissions. Learn more here: Toward a Healthier World - Connecting the Dots Between Climate, Air Quality, and Health, C40, 2019.

Integrating air quality in the Climate Action Plan: Greenhouse gas (GHG) emissions and air pollution have many common sources. They also share solutions. By integrating air quality management and climate action planning processes, cities can meet local air quality goals and climate goals, while improving residents’ quality of life. Consult the guide and summary for policy makers here.

Case Studies available on the Benefits page:

Complete Climate Action Plans assessments (2021):
- Johannesburg • Buenos Aires • Addis Ababa • Guadalajara • Acra • Lima • Chengdu
- Transport electrification:
  - Bangalore 2020 - Electrification of the Bus Fleet
  - Kolkata 2020 - Electrification of the Bus Fleet
  - Jakarta 2020 - Electrification of the Bus Fleet
  - Medallin 2020 - Electrification of the Bus Fleet
  - Rio de Janeiro 2019 - Electrification of the Bus Fleet
  - Chennai 2018 - Electrification of the Bus Fleet
  - Quito 2018- Electrification of the Bus Fleet
  - Ho Chi Minh City 2018 - Upgrading the Bus Fleet from Diesel to CNG / Promoting the Uptake of E-bikes
  - Salvador 2017 - Upgrading the Municipal Bus Fleet

Transport vehicle standards and low emission zone:
- Adlis Ababa 2020 - Setting Vehicle Standards
- Venice 2018 - City-Wide Low-Emissions Action
- Quezon City 2018 - Enforcement of Vehicle Emissions Regulations
- Paris 2017 - Fossil-Free Zone

Buildings and energy:
- Lima - Switching restaurant cooking stoves to more efficient technology
- Mexico City 2018 - Regulating Industrial Emissions
- Durban 2018 - Regulating Industrial Emissions
- Santiago 2017 - Replacing Wood-Burning Stoves
- Johannesburg 2017 - Electrification of Informal Settlements
Phasing out coal is the single biggest step we can take to keep global heating below the 1.5°C threshold. Coal is the largest source of greenhouse gas emissions, accounting for more than 30% of energy-related CO2.

Cities are at the centre of the global energy transition. They account for two-thirds of global energy use – meaning they both influence and are influenced by the shift from coal to clean energy, and the impact of this on climate, health and prosperity.

The research team has modelled new evidence for the urban case for a rapid coal phaseout. C40’s analysis provides compelling evidence of the adverse impact of coal-fired electricity on GHG emissions, air pollution and health, jobs and the cost of energy. The findings, which describe impacts on 60 C40 cities across 27 countries between 2020 and 2030, are based on detailed city by city modelling and present a clear urban case for the rapid phase-out of coal and transition to clean energy. Resources are available for all 61 cities on:

- Reduction in CO2 emissions
- Reduction in air pollution
- Premature deaths avoided per year
- Premature and low-weight birth
- Asthma new and emergency cases
- Years of lives lost with disabilities
- Value of avoided deaths
- Healthcare costs savings
- Days of sick leave
- Cost of electricity with several energy sources
- Jobs created

Based on currently announced national coal policies, 264,900 people could die prematurely due to air pollution caused by coal-fired power plants. With a rapid transition to clean energy, many of these lives could be saved. Coal affects all aspects of residents’ health, contributing to 121,000 preterm births, 93,600 new asthma cases among children and 247,900 asthma emergency visits. As many as 353,400 years of life will be affected by diabetes, stroke and chronic respiratory diseases due to air pollution from coal plants.

The scale of the ambition gap is huge. Our research shows that to stay in line with a 1.5°C scenario coal capacity in and around C40 cities needs to decrease by 61% between 2020 and 2030. However, current coal plans within 500 km of C40 cities will actually increase coal capacity by 4% over this period.

Phasing out coal will deliver a green, just and prosperous future. A rapid phase-out of coal in favour of renewable, zero-carbon technologies could create 6.4 million jobs – which is 11 million more jobs than would be created under current plans. Many cities are already realising this opportunity – and making sure no-one is left behind as they do. This means engaging and upskilling the communities that will be affected by the transition and ensuring that green jobs are accessible.

Urban action on coal can provide an essential contribution to achieving 1.5°C. A rapid phase-out of coal from C40 city’s electricity could prevent around 1.3 GtCO2e of GHG emissions. If C40 cities collaborate with other stakeholders to phase-out all coal-generated electricity across their surrounding energy region, the avoided emissions increase to a cumulative total of 24 GtCO2e, equivalent to 6% of the world’s total remaining carbon budget.

For more information, please visit [Resourse Link].
BENEFITS OF URBAN CLIMATE ACTION | RESEARCH SUMMARY

THE MULTIPLE BENEFITS OF BUILDING RETROFITS

Buildings are typically the biggest source of GHG emissions in a C40 city and contribute, on average, more than 60% of emissions. Buildings are also where urban residents spend 90% of their time and thus indoor environments have a significant impact on people’s health and economic savings.

Deep building retrofits can therefore be used as a policy measure to simultaneously deliver on multiple urban goals. Improving the energy efficiency of the building stock provides city governments with an opportunity to cut emissions, as well as reduce healthcare costs, tackle energy poverty and improve the productivity and educational attainment of urban residents.

To support cities in this process, C40 introduces a methodology and toolkit to enable cities to quantify the benefits from deep retrofit projects, and presents results from three cities. The tool was developed by C40 Cities with technical input from BuroHappold and University College London. The tool calculates benefits and data including:

- Reduced greenhouse gas emissions
- Job creation
- Time needed to earn back the investment through operational costs savings
- For office buildings, it also estimates increased employee productivity
- For residential buildings it calculates the reduction in energy poverty and improvement in health.

Case Studies: Milan, New York City and Copenhagen have used the methodology to assess the impact of some of their building retrofits policies. Read more here: Case Studies, 2019. Available in English and Chinese.

NEW YORK USA

DRIVERS OF ACTION

New York City contains just over 1 million buildings (Metcalfe, 2013), which collectively account for 67% of the city’s emissions (NYC Sustainability, 2017). Many of these buildings will still exist come 2050. As such, it is imperative that the city’s existing building stock be retrofitted in order to meet its ambitious emissions reduction targets. Meeting the new building targets will require climate action from all actors, public and private, and the municipality is setting an example and leading the way, with initiatives that affect their 4,000+ buildings and facilities.

These municipal properties are managed by more than 25 city agencies and span a wide range of building types, including schools, hospitals, firehouses, wastewater treatment plants, libraries and other facilities. Within the city, the Department of Citywide Administrative Services’ (DCAS) Division of Energy Management is tasked with serving as a hub for energy management. DCAS is responsible for achieving the city government’s GHG emissions reduction targets, including a 40% reduction for city-owned buildings by 2025, a 50% reduction by 2030, and a city-wide reduction of 80% by 2050.

PILOT PROJECT BENEFITS: 23 SCHOOLS

To date, DCAS has mostly implemented “low-hanging fruit” energy conservation measures, such as lighting- and heating-system upgrades, but the department recognises that delivering the objectives set out by Mayor De Blasio and the City of New York necessitates further bold and ambitious climate action. Deep energy retrofits could deliver these goals.

To achieve the targets set out in its 1.5°C compliant climate action plan (NYC Sustainability, 2017) and the Climate Mobilization Act, New York has highlighted the need to rapidly educate agencies and contractors on the meaning and necessity of deep energy retrofits.

The outcomes of this pilot programme will support DCAS and other city agencies in their efforts to make the case for a holistic approach to deep energy retrofits. In addition, the city is in the process of developing guidelines for deep energy retrofits. Peer-review by the C40 network will ensure that the findings of the pilot study inform the guideline development.

TAKING ACTION

For this pilot, New York focused on 23 public schools with particularly high emissions. Energy audits are currently being conducted and the city is considering the following retrofit elements: glazing, insulation, heating, ventilation and air-conditioning (HVAC), lighting, controls, solar photovoltaic (PV) and building management systems.

RESOURCES:
The tool and learning material are available online in English and Chinese.

Call to action: How many lives will an individual climate action save? How many new jobs will a building retrofit project result in? How will an improved building standard affect urban residents’ health, well-being and productivity?

Most of the world’s population live in countries where overweight and obesity kills more people than underweight. 33% of adults aged 18 years and over were overweight in 2016, and 15% were obese. Overweight is a major risk factor for noncommunicable diseases, increasing the prevalence of cardiovascular diseases, type 2 diabetes and cancer.

Due to increasing wealth and consumption, in addition to more sedentary lifestyles and unequal access to healthcare, urban living presents a major challenge to both human health and climate. Yet this also presents an opportunity for policymakers to make a huge positive impact on citizen’s health.

The Benefits of Walking and Cycling research is built upon case studies in cities to estimate the wider benefits of walking and cycling. The tool has supported 18 C40 cities to uncover the health and associated economic benefits of increasing walking and cycling in their city, due to the increase in physical activity. The tool calculates benefits and data including:

- Improved active mobility.
- Reduced mortality.
- Reduced incidences of cardiovascular diseases, stroke, diabetes, colon and breast cancer, dementia, depression.
- Value of lives lost.
- Avoided greenhouse gas emissions and pollutants.

**Case Studies**

- Lima 2020 - Pedestrianisation of the Historic Center Case Study (English / Spanish)
- Mexico City 2019 - Massive Bike Parking Facilities
- Bengaluru 2018 - Tender Sure Case Study
- Rotterdam 2019 - Superblock Oude Westen Case Study
- Houston 2018 - Summary Results and Full Report

Switching from driving to an active commute (walking at a brisk pace or cycling 30 minutes per day, 5 days a week) can deliver the following health benefits for citizens:

- 23% reduced risk of heart disease,
- 23% reduced risk of stroke,
- 15% reduced risk of type 2 diabetes,
- 14% reduced risk of depression,
- 12% reduced risk of breast cancer
- 11% reduced risk of dementia, and
- 8% reduced risk of colon cancer

RESOURCES:

The tool and learning material are available online in English.

Deep dive case study: Cycling prevents an estimated 10 deaths in Mexico City per year due to the protective benefits of increased physical activity.

See the full story [here](#).
HEAT RESILIENT CITIES: MEASURING BENEFITS OF URBAN HEAT ADAPTATION

The impact of extreme temperatures on health and wellbeing is rising up policy agendas in many cities. The Excel-based Heat Resilient Cities benefits tool has been designed to help city planners and decision-makers to quantify the health, economic and environmental benefits of common urban heat adaptation actions. Cities can use this information to make the case for urban heat adaptation investments, and to prioritise the actions that are likely to have the most positive impact locally.

Users can calculate the benefits brought by specific parks and green infrastructure, water bodies such as rivers and lakes, and cool and vegetative surfaces. The tool can also extrapolate results from these specific investments to calculate the benefits of scaling up across the whole of the city. The tool models the impact of heat adaptation actions on surface temperatures, and in turn the lower heat-related hospital admissions and economic cost savings that lower temperatures generate. The results of the tool are indicative, not definitive, due to the range of necessary and generalising assumptions which underpin the tool.

- Decreased urban heat
- Fewer days a year above the threshold
- Reduced mortality
- Reduced hospital admissions
- Reduced healthcare costs

The tool was developed with guidance from cities which participate in the C40 Cool Cities Network, and from urban heat and health impact specialists. It has been piloted with the cities of Medellín and São Paulo.

RESOURCES:
The tool and learning material are available online in English.

Deep dive case study:
- The health and economic benefits of Medellín’s green corridors. Available in English and Spanish.
- The health and economic benefits of São Paulo’s Ipiranga Stream Revitalisation. Available in English and Portuguese.
BENEFITS OF URBAN CLIMATE ACTION | RESEARCH SUMMARY

Waste management aims to reduce waste upstream, repurposing as much as possible and recovering materials for reuse. It includes managing waste disposal to minimize emissions from degrading material. Waste segregation or separation means dividing waste by category, typically for recycling and wet for composting or anaerobic digestion. A waste collection and segregation action refers to a policy or initiative that the city implements to increase waste collection and separation at or close to the source.

The tool has been developed by C40’s inclusive climate action (ICA) team and Dalberg, and calculates benefits and data including:

- Job Creation
- Time travel savings

The tool and learning materials are available online on the Resource Center.

AFFORDABILITY OF COOL ROOFS

Cool roofs are roofing surfaces (often coatings, membranes, or tiles) that are more reflective to sunlight than conventional roofs, keeping the roof surface and the building area beneath it cooler. Buildings with cool roofs require less energy to cool, saving building owners and residents money on their electricity bills.

The tool has been developed by C40’s inclusive climate action (ICA) team and Dalberg, and calculates benefits and data including:

- Net financial savings

The tool and learning materials are available online on the Resource Center.

BENEFITS OF BUS RAPID TRANSIT

Bus rapid transit (BRT) is a bus-based transit system that delivers fast and cost-effective services at metro-level capacities. BRT systems typically have faster average speeds than conventional bus systems through the provision of dedicated lanes, off-board fare collection, and faster and more frequent operations.

The tool has been developed by C40’s inclusive climate action (ICA) team and Dalberg, and calculates benefits and data including:

- Job creation
- Time travel savings

The tool and learning material are available online on the Resource Center.

BENEFITS OF CONGESTION PRICING

Congestion pricing involves charging drivers for operating vehicles on limited road space at congested times and locations. It promotes more balanced road usage by all transport modes (instead of prioritizing private vehicles) and helps to reduce travel times, improve air quality, and decrease greenhouse gas emissions.

The tool has been developed by C40’s inclusive climate action (ICA) team and Dalberg, and calculates benefits and data including:

- Time travel savings

The tool and learning material are available online on the Resource Center.

BENEFITS OF RAPID TRANSIT

Cities are made up of dynamic and complex social, political, economic and natural systems. Pursuing inclusive climate action in cities is critical, but not always easy or straightforward. C40 Cities, in collaboration with our partners, has developed a set of comprehensive resources to support cities in their efforts to advance climate action through an inclusive engagement and planning process that results in more equitable outcomes for all.

Our research has demonstrated that to deliver inclusive climate action, cities must ensure that principles of equity and inclusion are embedded in processes, policies and impacts:

- Processes are rooted in genuine engagement with a broad and diverse set of stakeholders, particularly those suffering from inequality and the impacts of climate change;
- Policies are actively designed with people, fairness and justice at the centre of decision-making; and
- Clear mechanisms exist - or can be put in place - for measuring, monitoring and evaluating both the direct impacts and the distribution of impacts of climate actions across the population.

For more information, explore our resources on inclusive community engagement, inclusive planning and equitable impacts.

Community engagement

Inclusive climate action starts with a process where everyone’s voice is represented. Inclusive community engagement underpins the delivery of equitable climate policies and should help to ensure that impacts are fairly distributed across the city’s population. C40 Cities encourages cities to engage a wide range of communities and stakeholders, with a particular focus on increasing involvement of populations adversely affected by climate change and suffering from inequality. For this reason, we have developed guidance, case studies, techniques and exercises on participatory processes in cities to support them in delivering and improving stakeholder and citizen engagement strategies while planning or delivering climate policies.

For more information, explore our resources on inclusive community engagement, inclusive planning and equitable impacts.

Inclusive Planning

Inclusive climate action must be underpinned by fair and equitable policies. C40 Cities encourages cities to design and plan their climate actions in a way that avoids unintended inequities and increases access of programmes and services for the majority of the population. The Roadmap for Inclusive Planning provides overarching guidance for cities to assess equity throughout their climate action planning process. Cities will be able to use this roadmap to influence equitable, fair and accessible climate mitigation and adaptation policies and actions. Specifically, this includes: guidance on conducting a needs assessment of the city (the “city selfie”); guidance for analysing the equity and inclusivity considerations of several climate actions; policy recommendations; and finally, example indicators and targets for equitable outcomes.

Equitable Impacts

Cities need to ensure that the climate transition has a positive impact on people’s lives, from decent jobs to improved health. It is critical that cities can quantify and communicate these wider benefits of climate action, and that they design climate action that ensures the equitable distribution of these benefits to their residents. The Toolkit for Equitable Impacts builds on C40’s existing research to provide city officials with a global approach for evaluating the non-GHG emissions impacts of climate action, based on the tools on benefits assessments.

For more information, explore our resources on inclusive community engagement, inclusive planning and equitable impacts.

Inclusive Planning

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Over 40 cities have undertaken benefits analysis to study the impact of their climate actions. Discover their stories by clicking on their boxes.

- **Houston** | Bike Lane
  - Expansion of the walking and cycling trail from the 270 miles to 872 miles.
  - $80M annual benefits

- **Mexico City** | Cycling Facilities
  - Maintaining the bike sharing system and bike parking facilities.
  - 6 times return on investment

- **Mérida** | Industrial Efficiency
  - Reducing voluntary industrial efficiency programmes to monitor and reduce industrial emissions.

- **Quito** | Electric Buses
  - Switching 1,200 old buses to electric.

- **Lima** | Biomass
  - Recommending efficient stove for traditional roasting restaurants.

- **Lima** | Pedestrian City Center
  - Pedestrianisation of the historic city center.

- **Santiago** | Wood Burning
  - Improving indoor air quality in houses by replacing wood-burning stoves.

- **Rotterdam** | Walking City Center
  - Encouraging citizens to walk in the city center.
  - 82% reduction in travel times.

- **London** | Walking & Cycling
  - Encouraging Londoners to walk and cycle for 20 minutes a day.

- **New York City** | School Retrosfits
  - Retrofitting average school portfolio.
  - 42% reduction in carbon emissions.

- **Paris** | Low-Emission Zone
  - Switching the bus fleet to clean vehicles and implementing a low-emission zone in the center.
  - 385 premature deaths avoided per year.

- **Venice** | Low-Emission Zone
  - Banning the circulation of polluting vehicles during pollution alerts.
  - 48% reduction in PM2.5 emissions.

- **Chengdu** | Electric Buses
  - Switching the public transport fleet to electric vehicles.
  - 75 premature deaths avoided per year.

- **Chennai** | Electric Buses
  - Upgrading 6,000 municipal buses to less polluting vehicles.
  - 100 hospital admissions avoided per year.

- **Ho Chi Minh** | Electric Transport
  - Upgrading 1,300 municipal buses to CNG and encouraging electric motorcycles.
  - 105 premature deaths avoided per year.

- **Ho Chi Minh** | Electric Transport
  - Switching all public buses to electric.

- **Bangalore** | Electric Buses
  - Switching all buses to electric.
  - £1 billion saved in healthcare costs.

- **Huston** | Bike Lane
  - Switching all the city buses to electric.
  - $80m annual benefits

- **Johannesburg** | Informal Settlements
  - Delivering electricity to informal settlements.
  - 250 days gained in life expectancy.

- **Durban** | Industrial Efficiency
  - Setting mandatory emission testing for private vehicles to phase out polluting vehicles.

- **Quezon** | Vehicle Testing
  - Setting mandatory emission testing for private vehicles to phase out polluting vehicles.

- **Addis Ababa** | Vehicle Standards
  - Phasing out the oldest and most polluting vehicles from the city.
  - 225 premature deaths avoided per year.

- **Rio de Janeiro** | Electric Buses
  - Switching the full bus fleet (2,348) to electric.
  - 35 premature deaths avoided per year.
BENEFITS OF URBAN CLIMATE ACTION | RESEARCH SUMMARY

PRESS COVERAGE

La bicicleta es un muy buen negocio y aquí le explicamos por qué, El Tiempo, July 2020, Colombia.

Cycling can bring multiple benefits, boosting local shops, enhancing people’s wellbeing and health and reducing premature deaths. This article summarises the findings of both TFl Economic Benefits summary, as well as C40 Benefits work with Mexico City, to introduce Bogota new cycling lanes.


Solutions to climate change and obesity can be found in our cities, Telegraph, January 14th 2020, UK.

As citizens and activists rally to engage governments to fight the twin challenges of climate change and health, it’s worth noting they share an important commonality: they can - and should - be tackled in cities. Decisions taken today about food, energy, green spaces and transport in our cities will be pivotal in determining the state of the climate and public health for future for generations.


A common language can unite energy saving efforts, Foresight, 11th October 2019, Denmark.

City decision makers often need to argue the case for energy efficiency across multiple administrative and budgetary departments, but there is frequently a significant gap between the priorities of each department. Four major metropolises have tested a tool aimed at creating a common language and prioritising the priorities of each department. Four major metropolises have tested a tool aimed at creating a common language among all department managers to enable much needed deep retrofits in public buildings and greater reductions in greenhouse gas emissions.

>> https://foresightdk.com/a-common-language-can-unite-energy-saving-efforts/

Learning by example, Foresight, 13th September 2019, Denmark.

The need to walk the talk is at the heart of the energy transition. Cities aiming to lead on carbon neutrality have the perfect opportunity to do just that by renovating their own building stock. Actions to reduce energy use in hospitals, schools and offices owned by local government authorities mean fewer greenhouse gas emissions and are a good way for cities to showcase the benefits of the energy transition for people’s wallet, health and comfort. The World Green Buildings 2018 report cites a “lack of public awareness” as one of the main barriers to energy efficient construction and retrofits worldwide. By renovating public buildings and shouting loudly to citizens about the gains, ignorance is a problem that can be overcome.

>> https://foresightdk.com/learning-by-example/


Millions of parking spaces should be removed and replaced with trees and cycle lanes to reduce air pollution and tackle climate change, according to a body advising mayors of the world’s biggest cities.

>> https://www.thetimes.co.uk/article/plant-trees-in-city-parking-spaces-jctsvxz28

PAST REFERENCES

Mayor of Medellín Federico Gutiérrez calls for Latin American cities to embrace zero emission transport and lead the world on climate action, C40 Media, July 2019, Global.


Mayor Crivella Commits to Make the Streets of Rio Free from Fossil Fuels by 2030, C40 Media, June 2019, Global.

>> https://www.c40.org/press_releases/fossil-fuel-free-no

Learning by example, Foresight, 13th September 2019, Denmark.

The need to walk the talk is at the heart of the energy transition. Cities aiming to lead on carbon neutrality have the perfect opportunity to do just that by renovating their own building stock. Actions to reduce energy use in hospitals, schools and offices owned by local government authorities mean fewer greenhouse gas emissions and are a good way for cities to showcase the benefits of the energy transition for people’s wallet, health and comfort. The World Green Buildings 2018 report cites a “lack of public awareness” as one of the main barriers to energy efficient construction and retrofits worldwide. By renovating public buildings and shouting loudly to citizens about the gains, ignorance is a problem that can be overcome.

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