CITIES AS CHAMPIONS FOR COLLABORATIVE CHANGE
83 members – megacities & innovators
THIS IS C40

A city leadership club, led by Mayors and based on data-driven participation standards
The Compact of Mayors – global emission inventory standard, target and plan
COLLABORATION WORKS

The best inspiration for one city leader is another mayor who has already solved the problem.
Spreading Solutions: how it works

Mayor of Rio attends C40 Mayoral Summit and learns the high recycling rates of other cities compared to Rio’s 1%

1. Install various bins for multiple sources
2. Maintain single source and build a Material Recovery Factory (MRF)

Mayor asks the waste management authority, COMLURB, to increase rates of recycling to match those of other C40 cities

Rio joins CCAC and C40 Integrated Waste Management Network and organizes exchanges with New York and Stockholm and technical support from USEPA

Rio gets feedback on solutions after presenting on a C40 webinar

Rio implements new MRF/manual sorting model that increases diversion and generates jobs, increasing rate of recycling
THIS IS C40
Direct support: 11 City Advisers

Vancouver
- Low-Energy Retrofit Program

Chicago
- Chicago Energy Program

Mexico City
- Climate Risk Prevention Program

Houston
- Integrated Waste Plan

New York City
- Buildings Energy Efficiency Program

Athens
- Comprehensive Climate Adaptation and Mitigation Plan

Addis Ababa
- Bus Rapid Transit

Shenzhen
- Low Emission Vehicles

Rio de Janeiro
- Enhancing the Climate Action Plan

Sydney
- Climate Action Sector Plans

Melbourne
- Low-Carbon Renewal of 2 Precincts
Celebrate success
THE IMPORTANCE OF PARIS

Paris created the momentum to avoid catastrophic climate change

• An Agreement creates global certainty for the first time
  • Aspirational target – 1.5 degrees
  • But doesn’t come into force until 2020
Cities are already collaborating and cutting emissions
10,000 C40 climate actions since 2009. 30+ C40 cities have gone past peak emissions. Collaboration is working.

The potential for C40 action is greater than anything yet delivered
There is vast potential for more city action on climate change; two-thirds (27,000) actions in the CAM database have yet to be attempted. 2,300 priority actions for cities that would save 450 MtCO$_2$e

Urban policy decisions determine a third of the global carbon budget
Cities can avoid locking in 45 Gt CO$_2$ by 2030, this is 8 times the current annual emissions of the US
DELMERING PARIS

Achieving a 1.5 degree target means focusing on cities

Land-use planning  
Transport  
Buildings
DELIVERING PARIS

What we are aiming for - every city needs to get to 2tpp/yr

- Oslo: 2.3 tons
- Stockholm: 3.6 tons
- Copenhagen: 2.5 tons
- AUS: 16.5 tons
- US: 16.5 tons
- EU: 6.8 tons
- China: 7.2 tons
DELIVERING PARIS

We broadly know what it will take to create low-carbon, healthy, prosperous cities

C40 is not prescriptive, but there is clear theme to what most member mayors see as the characteristics of a successful future city

Compact  Connected  Co-ordinated
COMPACT CITIES

Sprawl is the enemy, density the friend

- 60% of growth in energy consumption is due to urban sprawl
- Compact Copenhagen 4% GDP on transport vs sprawling Houston’s 15%
- Copenhagen’s success is based on long-term planning & rigorous enforcement

Fig. 2: Population and employment density along major transit routes in Copenhagen.

Legend
- Rail & Metro Network
- Density & Station
- Residents
- Jobs
- Local transport on Rail/ Metro line

Population Density
- Each color represents a 2,500 people per square kilometer
- Urbanized
- Greenzone

Copenhagen Metropolitan region

- Produce of 5-Finger urban plan (diagram)
- New development only permitted near public transport nodes
- Low congestion and pollution, but a thriving economy
- In one of the richest cities 40% of people cycle to work
COMPACT CITIES

Portland – “complete neighbourhoods” to counter suburban sprawl

Schools, parks and grocery stores to be in easy walking or cycling distance in 80% of neighbourhoods by 2035

- Population grown 200,000 to 600,000
- Old city = dense & has streetcars
- Newer areas grew up with the car
- 70% mode split for public transit, walking and cycling by 2035
- 33% of city covered by tree canopy by 2035
- Reducing carbon emissions to 50% below 1990 levels by 2035
CONNECTED CITIES

An advanced city is not where the poor drive cars, but where the rich use the bus

*Enrique Penalosa, Mayor of Bogota*

- 3.7 million premature deaths from air pollution each year
- Road traffic collisions kill 1.25m
- Congestion consumes 15% of Beijing’s GDP
- Transit-oriented development in the USA could cut car use 50% & reduce household expenditure 20%
- Globally TOD could save 1.5 billons tons GHG per year
3-fold increase in Bus Rapid Transport in C40

- Half the cost of light rail & one tenth of metros
- Joburg Corridors of Freedom

C40 Bus Rapid Transit Network
Nanjing – 4,000 electric public vehicles already

- Shenzhen – 1,000 electric buses
- Beijing – ordered 9,000
- China has started an electric bus revolution

2015 C40 Award Winner

Photo credit: greenroofs.com
Catalyzing markets: The C40 Clean Bus Declaration

- 24 cities sending a message to manufacturers
- Want to buy electric or clean vehicles
- **10% cut in price** of hybrid buses in London as a result

*C40 Low Emission Vehicles (LEV) Network*
Transport in Oslo will be zero emission by 2020

Oslo plans to be the first fully zero-carbon transport city. It is investing heavily in electric & hydrogen vehicles.

- 30% of cars sold in Oslo in 2015 were electric or hybrid
- 24% of transport emissions are from construction vehicles
- More than 15,000 EVs in Oslo-region
- 650 public charging stations with free parking reserved for EVs
- 1,000 municipal zero emission vehicles
We’ll need electric cars too

- **Paris**: Autolib', the full electric car-sharing
- Just **10 euros** per day
- **250km** range on a single charge
- **BMW** move to “sell mobility, not cars”

*C40 Low Carbon Vehicle Network*
Return of the Bike

- **Rio**: 450km cycle lanes = the longest in S. America, with 80km added for the Olympics
- Over 700 cities have **bike share**, up from just 5 in 2000
- $1 per trip health care savings in **Copenhagen**
- **China** – protecting remaining cycling
CONNECTED CITIES

Road pricing is inevitable in most big cities

London – 1st major city to achieve a shift from cars to public transport
Stockholm – 35% fall in transport emissions while economy grew 40%

350 more buses to catch
The Charge is helping it happen

MAYOR OF LONDON
CO-ORDINATED CITIES

Successful future cities will run on data

Rio Operations Centre: "I sleep better thanks to it. The worst thing is not having the information, to not have the tools to act. But we do now." (Mayor Paes)

• Prompted by fatal landslides
• Decreased emergency response times 30%
• Co-ordinates all service, including transport and waste
Benchmarking to catalyse change

- **New York**: One City Built to Last
- 30% GHG reduction from buildings 2005-2017
- **Benchmarking** required for all buildings over 25,000sqft

2015 C40 Awards Winner
Tokyo: City Cap-and-Trade Program

- 25% reduction in commercial building GHG in 5 years
- 1,400 buildings
- Inspired 6 Chinese cities

2013 C40 Award Winner
Energy performance contracting

- London RE:FIT Program uses energy performance contracting to leverage private capital for public building retrofit
- 1,500 buildings
- Every £1 spent on reducing fuel poverty cuts health bills £0.4
- Tax returns £1.27 for every £1 invested, due to job creation & lower bills
Making use of nature -
the bioreactive façade

• Using simple photosynthesis

• **Hamburg**: world’s first algae powered building

• **Paris** algae used as fertilizer for new urban gardens
The Big Oyster once again
CO-ORDINATED CITIES

30% of C40 cites’ climate action is delivered through collaboration
CONCLUSIONS

Decoupling emissions from economic growth is possible

Portland, Oregon
WHAT’S NEXT?
If Mayors ruled the world..
Thank you

@MarkWatts40
Reducing waste’s carbon footprint: Rio’s Recycling and Waste Collection

C40 Sustainable Solid Waste Systems Network

Photo credit: Paula Whitaker
Creating resilient cities: Ho Chi Minh City Adaptation Strategy

C40 Connecting Delta Cities Network
Ensuring low-carbon development: Beijing Green Ecological Demonstration Zone Evaluation Standard

C40 Climate Positive Network
Financing climate action: Portland Green Bond

C40 Sustainable Infrastructure Finance Network