The ClairCity Bristol Action Plan

For citizen-inclusive air quality and carbon policies

ClairCity

Our future with clean air
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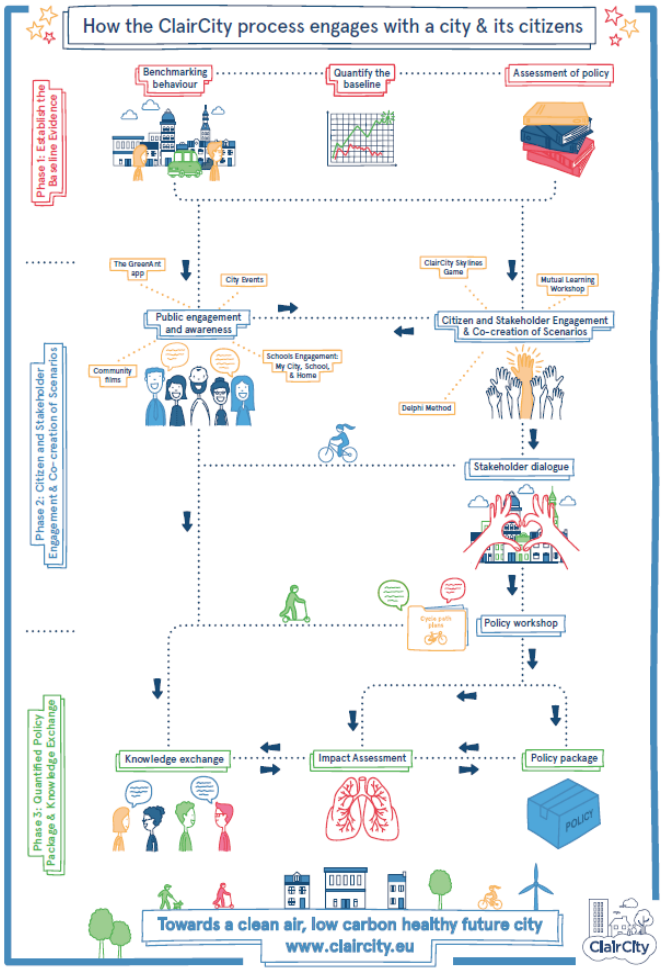
ClairCity is an EU research project which aimed to raise awareness about air pollution and carbon emissions in our cities, looking at how our behaviour contributes to the problems and affects the air we breathe. Uniquely, the project put the power in the hands of residents to determine the best local solutions.

Air pollution causes five deaths per week in Bristol, with emissions still exceeding legal limits and WHO guideline values. While carbon emissions are declining due to decarbonisation of the national electricity generation mix, substantial further emission reductions are required in order to make the city carbon neutral by 2030.

ClairCity examined the possible future impacts of citizens' policy preferences and implementation possibilities. By investigating citizens' current behaviours, their preferred future behaviours and their preferred future policy measures, this brief aims to inform policymaking in Bristol.

Our behaviour creates air pollution

Transport and heating are the main citizen activities contributing to air pollution and carbon emissions in Bristol. Using innovative transport and emissions modelling for Bristol integrated with travel survey data, ClairCity found that private cars contribute 45% of nitrogen oxides (NOx) and 40% of particulate matter (PM) emissions in the city. Residential heating contributes 8% to NOx emissions and 48% to PM emissions – out of which 28% arise from residential wood burning. About half of Bristol carbon emissions arise from residential energy use and some 15% from transport.



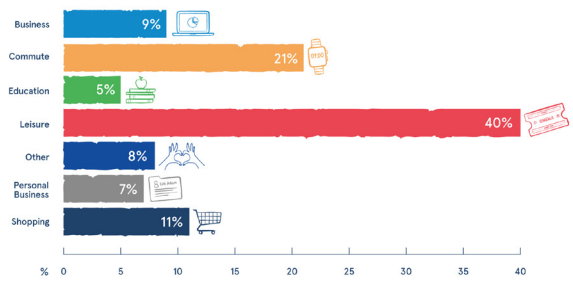
More car journeys mean more pollution

People with higher incomes travel more often by car than those from lower income households, resulting in higher emissions. People earning over £50K generate 22% of NOx emissions compared to only 13% produced by people earning less than £25K.

Those aged 26-49 years old produce the most air pollutants through greater use of their cars for leisure activities and commuting to work. A substantially lower proportion of Black or Minority Ethnic (BME) people use a car as their sole means of transport than white respondents. This holds for commuting, leisure and shopping transport.

The full report can be accessed here: www.claircity.eu/reports.

KM travelled by motive, 2015 baseline in Bristol



This graph shows the relative contribution of each motive to total KM travelled in Bristol in 2015.

Leisure and shopping are overlooked

Across all ages, genders, and income brackets, over 50% of NOx comes from trips to the shops or leisure activities not related to work.

Bristolian men contribute 10% more to NOx emissions than women (40% vs 30%), largely because they use their car for commuting and business more than women. Both sexes contribute about the same NOx from bus trips.

"Unfortunately, I use my car"

Many Bristol citizens would be willing to change their own transport and heating behaviours as a contribution to ambitious air quality and carbon policies in Bristol. ClairCity directly engaged 1,400 citizens with a wide variety of economic and ethnic backgrounds. Three-quarters (74%) of participants would like to use public transport or active travel in the future, compared to 54% now. For shopping and leisure, 66% want to use public or active transport in the future, compared to 38% now. Travel and work/housing options currently prevent this.

"Not enough public transport (train and bus) in terms of frequency and diversity. Current public transport are too expensive and I am living too far away from work to be able to cycle. I do want to change! Unfortunately it's too challenging at the moment."

(Female, BME, degree qualification)

"Have you tried going to the countryside with two kids but without a car? No cycle lanes, no acceptable buses at most places."

(Male, white, degree qualification)

Citizens seek more ambition

Using the Delphi survey process, workshops, and an innovative Skylines game, ClairCity asked citizens about the types of policy measures they would support to reduce air pollution and carbon emissions.

The favourite citizen policy measures were banning/phasing out the most polluting vehicles (not just charging vehicles); making buses greener and cleaner; making public transport cheaper, and creating good alternatives to car use – through better walking and cycling infrastructure.

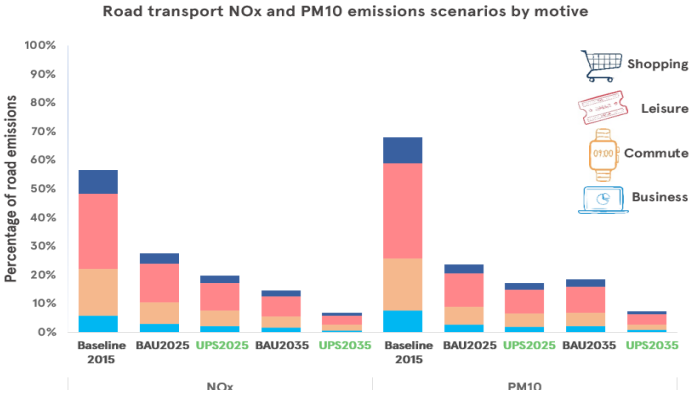
These measures are very much in line with existing or announced policies, but citizens ask for either a faster implementation or more ambitious targets in the execution of the measures compared to current policies.

Citizen-led policy making

1	Ban/phase out polluting vehicles
2	Make buses greener and cleaner
3	Cheaper public transport
4	Create alternatives to car use – walking and cycling
5	Reduce vehicle road space – increase public transport space
6	Improve walking environment
7	Charge older/more polluting vehicles entering the city
8	Promote electric vehicles
9	Awareness raising to promote active and public transport
10	Organisations to make it easier for employees to work from home
11	Make property developers prioritise air pollution and climate change
12	Build housing close to major employment zones
13	More local shops and facilities in neighbourhoods
14	Organisations to provide flexible working hours for employees
15	Improve energy efficiency for housing (rented/existing/new)
16	Increase generation of solar and wind power
17	Spread economic opportunities across different areas of the city

Business as usual is not good enough

Modelling air pollution reduction

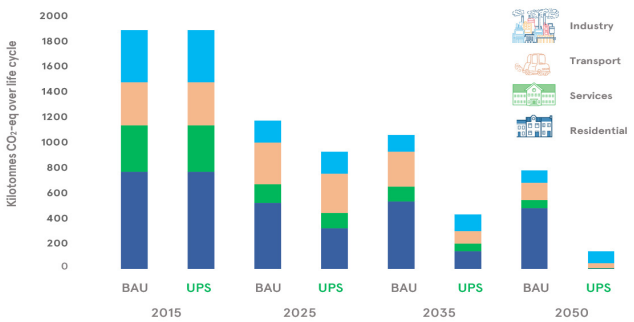


ClairCity modelled the impact of these policy measures (unified policy scenarios (UPS)) and compared them to business as usual (BAU) for 2025, 2035 and 2050. The UPS scenario compliance with legal levels of air pollutant NO_2 would be reached in the timeframe required by Government, whereas the BAU scenario does not.

The citizen UPS scenario would therefore significantly improve human health compared to the current situation and to future BAU. It is estimated that the number of premature deaths would be reduced by about 50% in the UPS scenario.

Taking citizen-led action will also make the city of Bristol – contrary to the BAU - achieve near carbon neutrality by 2050. The largest gains are had in the built environment sector, for example through the introduction of district heating. A change in the behaviours of citizens towards a higher share of renewable-based heating and the replacement of individual wood based heating must be promoted and supported.

Modelling carbon emissions reduction



Bristol is not alone in tackling these issues. Internationally, many cities struggle with implementing citizen-inclusive air quality and carbon policies. ClairCity shows the benefits of maintaining regular and long-term exchange of experiences and experiments with a diverse and international network of cities.

Experts reinforced policy feasibility

The following actions were proposed by Bristol policy makers to implement the suggested citizen measures.

Bristol City

- Renewables and energy efficiency targets and implementation using locally generated energy as much as possible.
- Parking permits, workplace levy and congestion fees to fund City Council measures.
- Electric taxi charging points to be installed.
- Reallocation of road space in favour of public transport, walking and cycling, could also include closing the city centre for cars and extending resident parking space by closing roads.
- Segregation of cycle lanes, loan bikes, free bike training, subsidies for electric bikes, BCC cycle/walking group and general promotion of active travel.

Regional ideas

- Integrated regional transport planning to work and leisure activities, including Park and Ride, train and bus, regional bike and (tourist) walking routes.
- Integrated spatial energy planning (e.g. for renewables and district heating).
- Tendering for bus companies' licenses.

Business

- Contribute to funding through work place parking levy, subsidising sustainable staff travel.
- Promotion of alternative travel for staff through car clubs, better on-site facilities (showers, lockers and bike racks), restricting on-site car parking, cycle to work schemes, active travel champions.
- Voice for change e.g. cycle business charter, flexible working hours, route planning.
- Cleaner fleets, micro-freight consolidation, go-low pilot, incentivise EV fleet.
- Invest in commercial solar power.

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