2025 Report

C40 CLEAN AIR ACCELERATOR

How cities are cleaning the air we breathe

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C40 CITIES

ACKNOWLEDGEMENTS

This report was created in collaboration with officials in the C40 Clean Air Accelerator signatory cities, C40 staff, the Clean Air Fund and other C40 funders. Thank you to everyone who has contributed to the report and the actions that are driving forward immediate and inclusive climate solutions to achieve the commitments of the C40 Clean Air Accelerator. For further information on the C40 Clean Air Accelerator, please check out the accelerator webpage.

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INTRODUCTION

Air pollution is a silent, global killer, shortening lives and causing harm even at levels that meet many national air quality standards. In 2023 alone, air pollution was responsible for 7.9 million deaths. It is the second leading risk factor for mortality globally – ahead of even tobacco and poor diet.

Signatory cities of the C40 Clean Air Accelerator are at the forefront of global efforts to improve air quality in cities. Since its launch six years ago, committed mayors have driven impactful changes in cities for more than 258 million residents. Together, these cities are demonstrating that strong leadership and inclusive clean air action can create meaningful change worldwide.

Growing scientific evidence continues to highlight the severe health impacts of air pollution, prompting the World Health Organization (WHO) to announce an updated roadmap for an enhanced global response to the crisis, during the second WHO Global Conference on Air Pollution and Health in March 2025. In response, C40 Cities Co-chairs, Mayor of London and Mayor of Freetown, released a statement on behalf of the signatory cities of the C40 Clean Air Accelerator, endorsing and commending the updated roadmap for addressing the health impacts of air pollution. They highlighted the critical role cities play in tackling this crisis, championed the work delivered by signatory cities of this Accelerator, and recognised the need for further urgent action to tackle toxic air across all levels of government.

Signatory cities are demonstrating leadership by implementing impactful actions such as expanding clean public transportation and active mobility infrastructure, introducing clean air zones to restrict polluting vehicles, and electrifying municipal fleets. They are also advancing the transition to clean cooking and heating, strengthening industrial emissions regulations, increasing urban green spaces, and protecting vulnerable populations from air pollution.

Cities are proving that bold, coordinated action can deliver measurable improvements in urban air quality. Since 2018, signatory cities have achieved a 6% reduction in fine particulate matter ($PM_{2.5}$) and an 11% reduction in nitrogen dioxide (NO_2). This translates to cleaner lungs for children, fewer hospital visits for vulnerable groups, and thousands of lives saved each year.

This fifth Clean Air Accelerator report highlights three key themes that have emerged in recent years. While the specific actions taken by the 51 signatory cities vary according to local context, these shared priorities highlight the collective commitment to achieving cleaner, healthier, and more equitable cities for everyone.

1. Rapid progress is possible

Signatory cities are demonstrating that bold, targeted action can transform their air quality in less than a decade. In Paris, restricting polluting vehicles has cut NO_2 nearly in half, and $PM_{2.5}$ by more than a third in just 10 years. In London, air pollution policies have resulted in legal limits for toxic NO_2 pollution being met for the first time, almost 200 years earlier than predicted. Through bold action to tackle air pollution, Madrid and Barcelona now breathe the cleanest air since records began over 20 years ago. In Seoul and Warsaw, replacing toxic household boilers has slashed $PM_{2.5}$ by 23–30% in under seven years – a change that has saved over 30,000 lives since 2008 in Seoul alone. The new metro and shift to electric buses in Quito is already improving air quality, with some monitors showing 15% lower levels of $PM_{2.5}$ during peak hours.

2. Better data means better action

Impactful clean air policies rely on robust air quality monitoring. This essential data allows cities to set relevant air quality targets, identify pollution sources and hotspots, assess the effectiveness of existing policies or inform future action, and track long-term trends. By making air pollution levels publicly accessible, cities are empowering residents with essential information about their exposure to air pollution and the associated health risks.

Cities are taking a leap forward in their air quality monitoring. Since signing the accelerator, 38 cities have expanded their monitoring networks, leveraging a new generation of lower-cost sensors. Since 2019, signatory cities have expanded from just 250 $PM_{2.5}$ sensors to more than 1,600, and from 49 NO_2 sensors to nearly 900.

This has increased capacity in cities to design effective evidence-based policies and long term plans that target main pollution sources and hotspots, protecting the frontline communities most vulnerable to air pollution.

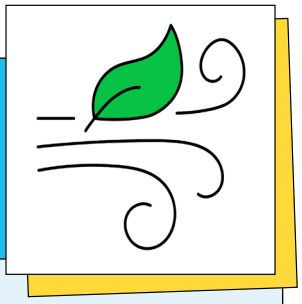
3. Inclusive clean air action is imperative

By cleaning the air, local governments have a transformative opportunity to build more resilient and healthier communities. Cleaner air has the power to improve the wellbeing of residents and provide economic growth, while also tackling climate and health injustice and delivering equity benefits.

Mayors are implementing data-driven inclusive clean air actions and prioritising those most vulnerable to air pollution. They are implementing clean air actions that create five key opportunities for thriving communities: reducing health inequities; improving accessibility, wellbeing, and resilience; providing good, green jobs and a just transition; supporting local economies and tackling cost-of-living challenges; and building coalitions of clean air advocates.

Multi-level partnerships across local, regional, and national governments are essential for sustained long-term progress on clean air. Cities are acting to reduce pollution and tackle the climate crisis, leading to healthier communities and green jobs. However, they often lack all the necessary regulatory authority and financial resources to address all major sources of air pollution. This is why coordinated action with other levels of government is crucial for establishing regulatory frameworks, setting targets, and securing funding, ultimately creating clean air in cities.

UPDATED CLEAN AIR ACCELERATOR



In the six years since the launch of the Clean Air Accelerator, more than 50 cities have committed to delivering cleaner air for their residents. To ensure the framework stays up to date and continues to provide a platform for cities to work on and advocate for science-based clean air action beyond 2025, we have updated the Clean Air Accelerator.

This updated framework ensures signatory mayors continue to be recognised as global leaders in clean air action – and that cities continue to receive ongoing support and are equipped with the latest best practices to implement clean air initiatives.

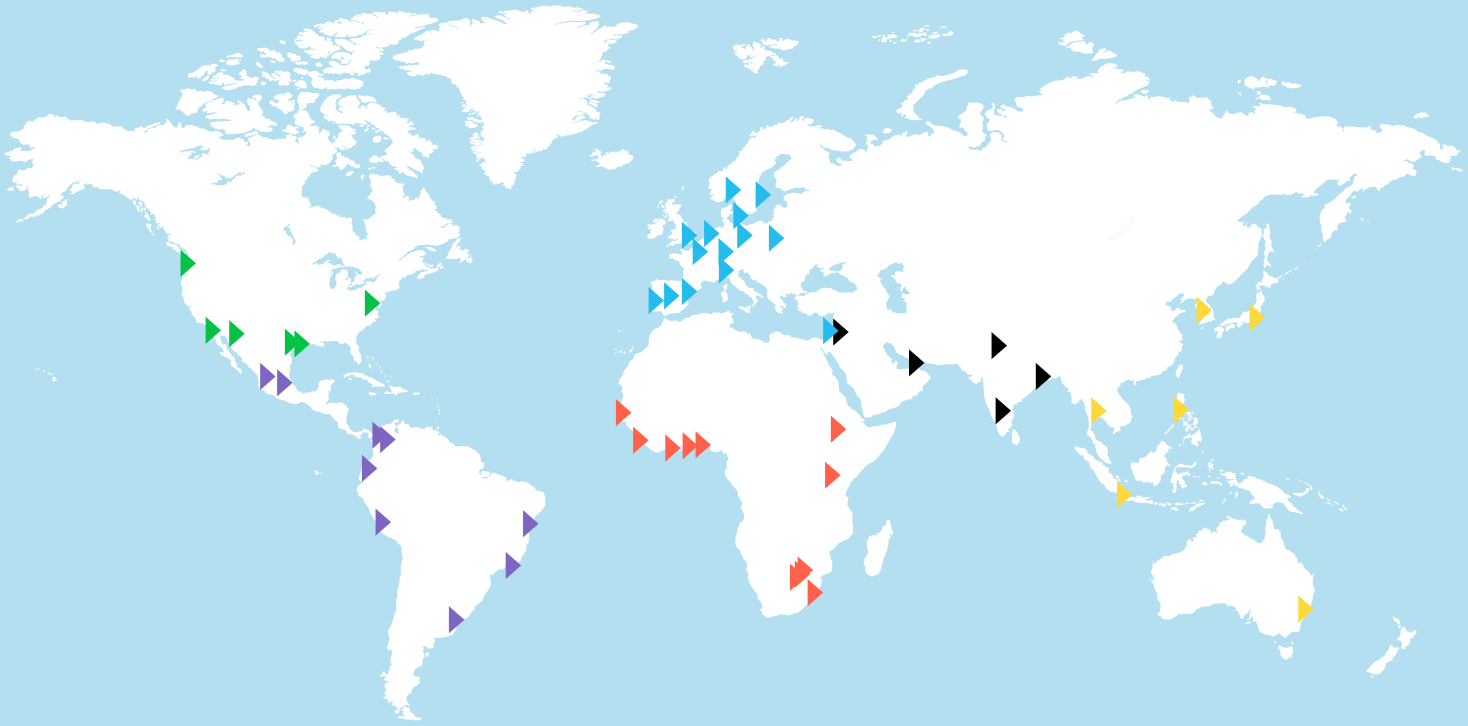
The updated framework maintains the same core commitments, but better illustrates the work that signatory cities have been and will be implementing. The updated Clean Air Accelerator commitments are:

- Setting ambitious reduction targets for air pollutants that put cities on a path towards meeting World Health Organization final and/or interim Air Quality Guidelines and installing and/or maintaining reliable city-wide air quality monitoring networks with public data access.
- Implementing new substantive policies and programmes to address the top causes of air pollution emissions within cities and under their control, in order to meet reduction targets for air pollutants set by cities.

The updated framework unites all current and future signatory cities in their journey towards cleaner and healthier air. It removes the 2025 deadline, and instead aligns action implementation with each city's individual air quality targets and local air quality management plans. This approach recognises the varied needs across regions, taking into account local capacity, current pollution levels, and the specific actions necessary to achieve national and city goals.

* Read the updated Clean Air Accelerator text and guidance on key priority actions to tackle air pollution. This document can be found in the C40 Webpage.

SIGNATORIES



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PROGRESS OVERVIEW

Through the C40 Clean Air Accelerator, 51 signatory cities are delivering clean air actions to protect the health and wellbeing of their residents. The accelerator provides a science-based framework for progress, guiding cities to set ambitious air quality targets, implement locally relevant and high-impact measures to reduce pollution, and track and report their results transparently.

Since signing the accelerator, cities have demonstrated measurable progress:

- 38 cities have expanded their air monitoring networks, generating critical data to assess public health risk, identify pollution sources and hotspots, and evaluate the effectiveness of control measures.
- 90% of signatories now have systems in place to make air quality data publicly accessible, empowering residents with timely information about air pollution levels and health risks.
- More than 170 action have been implemented, a 70% increase since last report in 2023 and a set of additional 300 actions remain on track. These initiatives target key pollution sources, with transport remaining a top priority alongside emissions reductions in energy, buildings, and waste.
- Clean Air Accelerator cities are advancing five key opportunities to support thriving and resilient communities through clean air action. These actions are being delivered across sectors, integrating inclusivity and equity as core principles in planning and implementation.

COMMITMENT 1: Set ambitious reduction targets for air pollutants that put us on a path towards meeting World Health Organization final and/or interim Air Quality Guidelines and install and/or maintain reliable city-wide air quality monitoring networks with public data access

SETTING AMBITIOUS REDUCTION TARGETS FOR AIR POLLUTANTS

Since the launch of the Clean Air Accelerator in 2019, legal frameworks and air quality standards in many countries, regions and cities have been updated, in response to the growing evidence of the impact of air pollution even at seemingly low levels.

Most signatory cities (88%) have air quality targets for $PM_{2.5}$ in alignment with WHO air quality guidelines and interim targets. These evidence-based targets are helping cities to set measurable objectives that inform policy and investment decisions. After signing the Clean Air Accelerator, **Buenos Aires** passed a resolution to establish new air quality standards and reduction objectives, with five progressively more extensive implementation stages until the 2005 WHO air quality guidelines are met. In June 2021, **Rio de Janeiro** launched its Sustainable Development and Climate Action Plan (PDS), which included the introduction of new, more stringent PM_{10} targets. These targets surpass national standards, which the city had already met. This initiative ensures Rio de Janeiro's continued leadership in clean air efforts, providing its residents with even cleaner air.

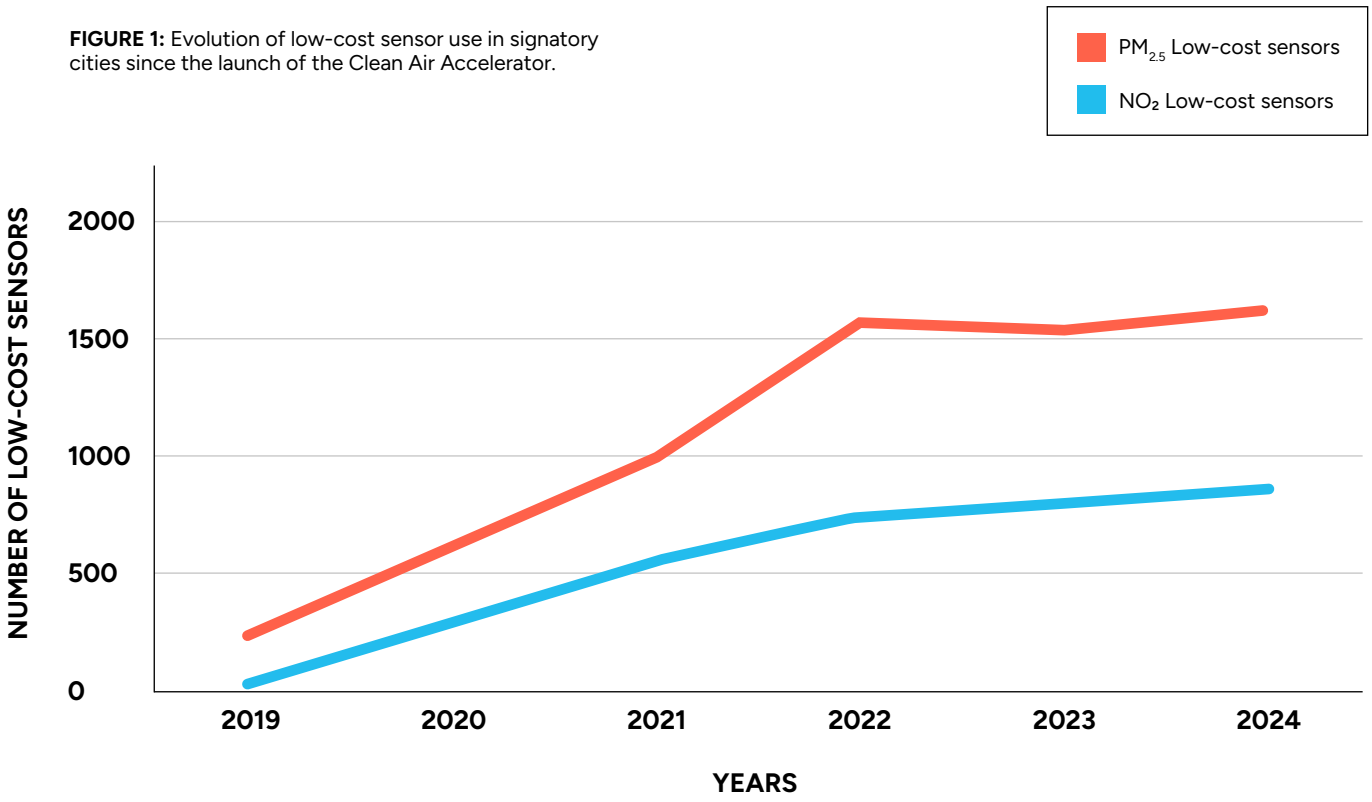
Cities are including these targets in legislation and air quality management plans. The majority of signatory cities (88%) have an air quality management plan (or equivalent) that uses data collection on air pollution and its impacts to guide their priorities. In 2024, **Dakar** marked a significant step towards cleaner air by completing its first air quality management plan. This involved establishing baseline pollutant emission levels and identifying actions to address primary sources of air pollution within the city. In the same year, **Dubai** finalised its new air quality strategy with targets to achieve national standards and WHO air quality guidelines. **Berlin**'s new clean air plan will be approved shortly, creating legal certainty for air pollution control measures and compliance with new EU air quality limits for 2030.

C40 cities are demonstrating significant progress towards meeting their clean air targets. Since 2018, signatory cities have achieved a 6% reduction in $PM_{2.5}$ and an 11% reduction in NO_2. This translates into more than 21,000 lives saved from air pollution, 240,000 years of life gained, and over 48,000 cases of childhood asthma prevented worldwide - while also saving an estimated US$47 billion.

COLLECTING RELIABLE CITY-WIDE AIR QUALITY DATA THROUGH MONITORING NETWORKS

Robust air quality monitoring networks provide cities with essential data for policy making. Cities increasingly rely on new air quality monitoring innovations to achieve their goals, with a significant increase in the number of low-cost sensors deployed.

FIGURE 1: Evolution of low-cost sensor use in signatory cities since the launch of the Clean Air Accelerator.



Thirty-eight signatory cities have expanded their air quality monitoring networks since joining the accelerator, including throught low-cost sensors. Figure 1 shows that since 2019 signatory cities have expanded from just 250 $PM_{2.5}$ sensors to more than 1,600, and from 49 NO_2 sensors to nearly 900.

Nairobi and **Salvador** are two cities leading the way. Nairobi launched its first city-owned air quality monitoring network, with 50 new locally owned and operated sensors to collect real-time data. This enables the city to make more effective, data-driven interventions to better protect public health. The initiative has received support from Breathe Cities. Salvador expanded its air quality monitoring network in 2024, adding 20 new monitors strategically placed based in historically marginalised and overburdened areas – including the communities of Ilha de Maré, Subúrbio Ferroviário, and Ilha dos Frades – to ensure comprehensive and equitable data collection across all communities. **London** is also scaling up its groundbreaking participatory Breathe London network to deepen understanding of air pollution exposure while engaging communities directly in air quality monitoring efforts. Through new investment announced in June 2025, the city will continue to operate and expand Breathe London, ultimately managing 350 sensors across the capital.

Cities are developing the platforms and tools residents need to access and understand air quality data. This transparency empowers communities to take action to reduce their exposure to pollution and builds public support for policy measures. The majority (90%) of signatory cities now have systems in place to share air quality data openly – through air quality indexes, public databases, alert systems for hazardous pollution events, and user-friendly web portals or mobile apps. In 2024, **Copenhagen** introduced an air quality forecast system that provides hourly pollution estimates for the next four days. Building on this system, the city's health administration developed an app that issues alerts when high pollution levels are expected, helping residents – particularly vulnerable groups – take precautionary measures. **Bogotá** has also worked on a new, freely accessible educational web platform that gives the public access to real-time air quality data and reports from the city's monitoring network, promoting awareness and informed engagement.

COMMITMENT 2: Implementing new substantive policies and programmes to address the top causes of air pollution emissions within cities and under their control, in order to meet reduction targets for air pollutants set by cities

As signatories of the Clean Air Accelerator, 51 cities are implementing over 600 clean air actions. Through these actions, cities are proving that air quality improvements are possible. Signatories are reporting significant progress towards meeting their commitments, with more than 77% of actions delivered or on track to be implemented, up from 72.5% in 2023. This represents more than 170 actions to address the top causes of air pollution emissions in cities, and more than 300 additional actions on track to be delivered.

FIGURE 2: Type of actions and percentage of actions corresponding to each sector of implementation under Commitment 2.

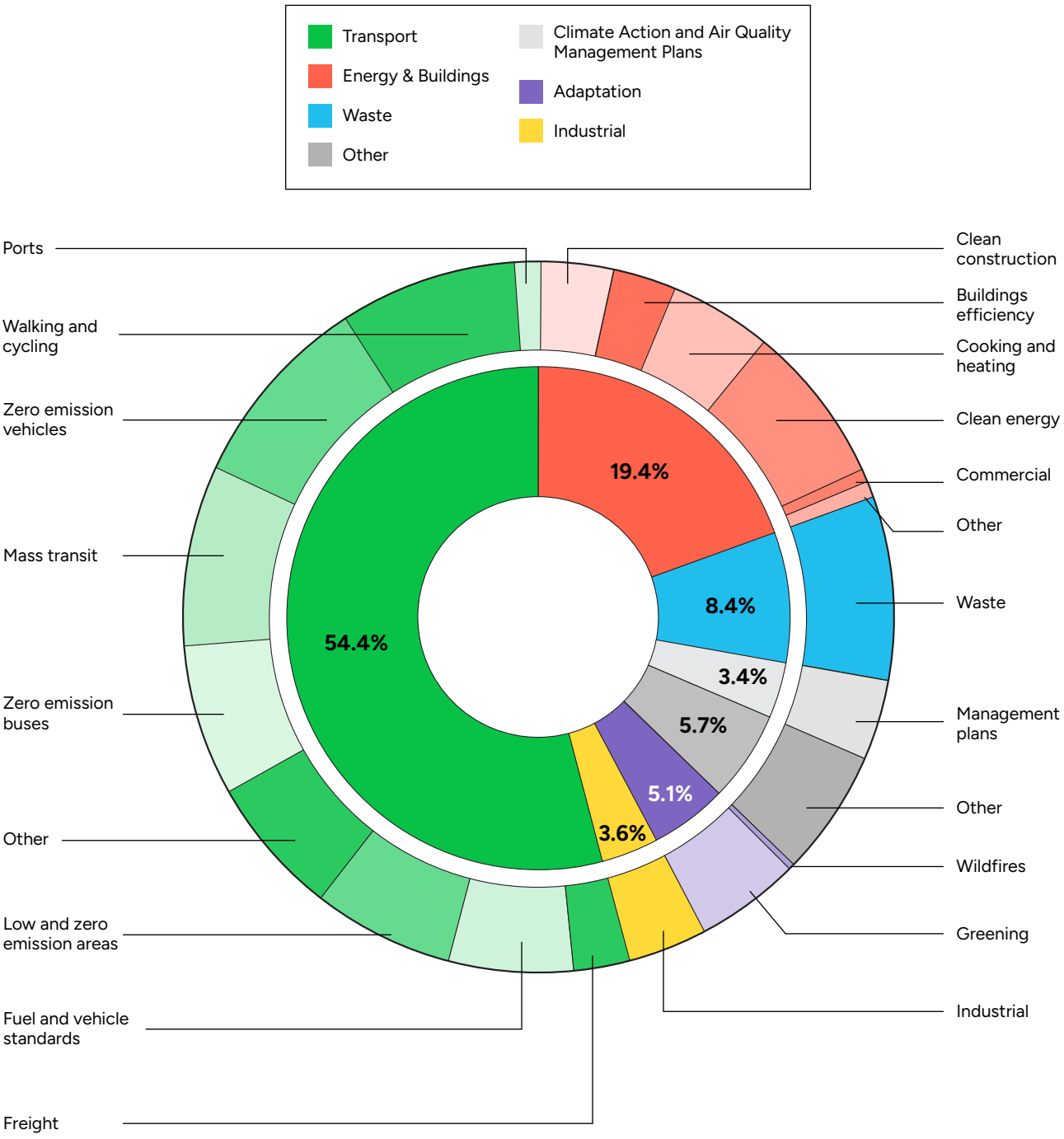
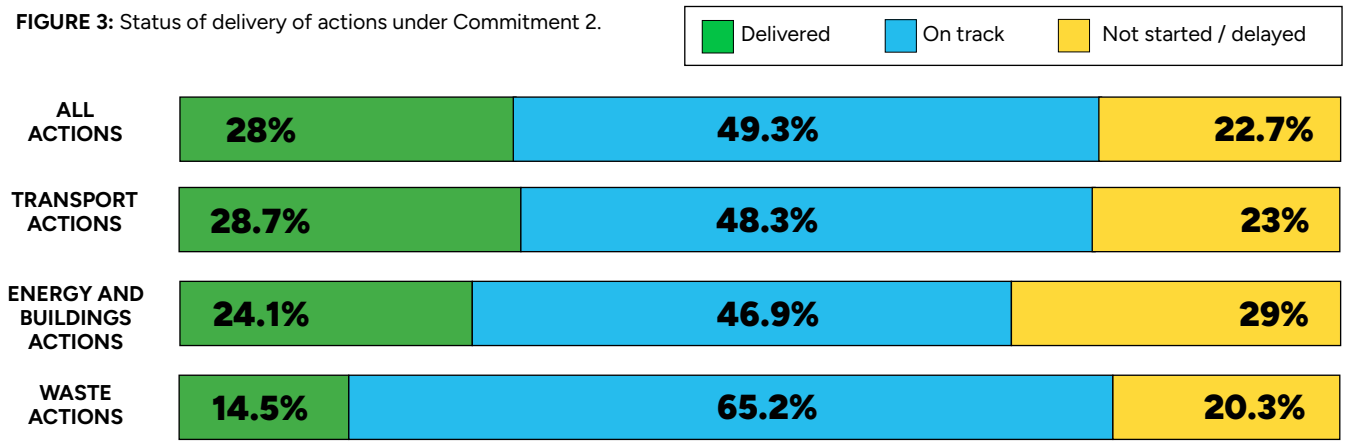


FIGURE 3: Status of delivery of actions under Commitment 2.



CITY ACTION FOR CLEAN TRANSPORT

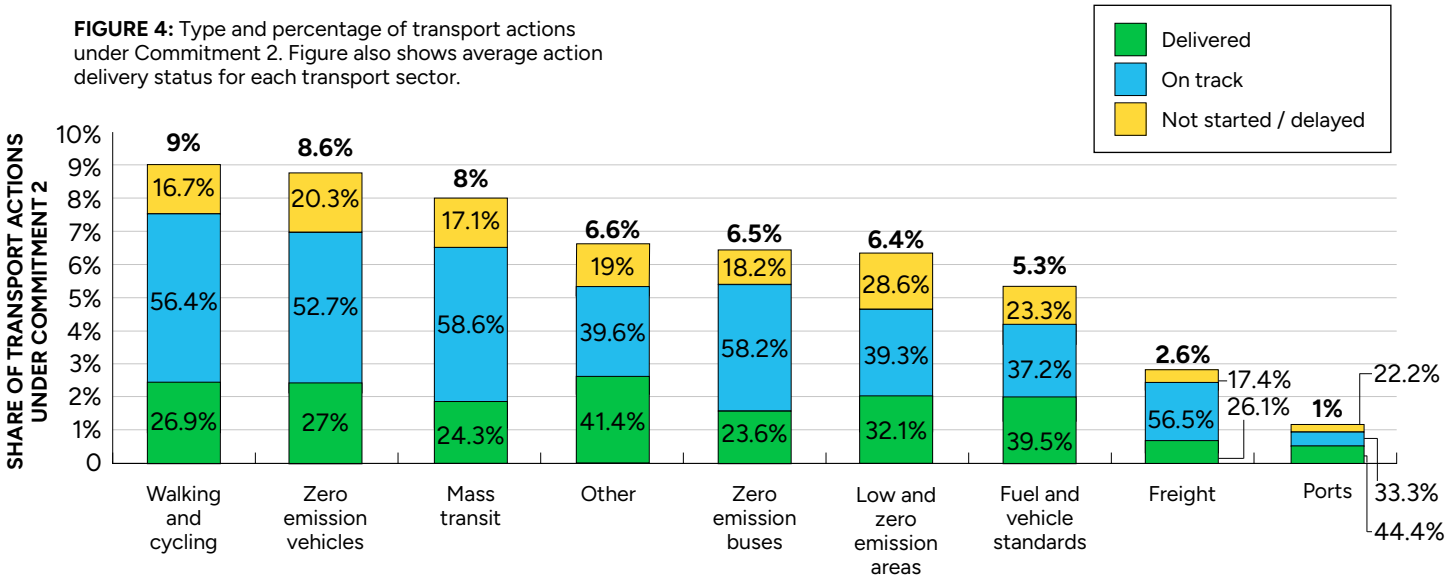
Transport remains a key priority for cities, due to the significant air pollution emitted by vehicles, and the levers cities often have to control transport emissions. A total of 47 signatory cities are implementing more than 350 actions – representing 54.4% of all committed actions – to address emissions from the transport sector as part of their accelerator commitments (see Figure 2). These actions include restricting high-polluting vehicles in urban areas, reallocating road space to active and sustainable modes, improving public transport, and reducing vehicle emissions through cleaner fleets, electrification, and stricter standards (see Figure 4).

The implementation of **Clean Air Zones** across signatory cities is a growing strategy, building on the successes seen in many cities using these policies. In recent years, more cities have introduced or planned to introduce Clean Air Zones, adapting their approaches to local contexts and governance powers. Common models include Low Emission Zones that ban or charge polluting vehicles, Zero Emission Delivery Zones and Zero Emission Freight Zones that prioritise access to clean logistics vehicles, and large-scale pedestrianisation projects that directly restrict vehicle access, reprioritising space for people.

Currently, 33 signatory cities have implemented or are actively working towards restricting high-polluting vehicles that directly impact residents' health – up from 30 cities in 2023. At the same time, 47 cities are **reallocating road space from cars to active and sustainable modes of transport**, or are in the process of doing so – up from 42 in 2023.

London continues to demonstrate the positive impact of ambitious policies through its Ultra Low Emission Zone (ULEZ). Since its implementation, roadside concentrations of toxic NO_2 have nearly halved, and the city has met legal limits for toxic NO_2 pollution almost 200 years earlier than predicted.

FIGURE 4: Type and percentage of transport actions under Commitment 2. Figure also shows average action delivery status for each transport sector.



Meanwhile **Milan** is reprioritising space and improving safety through a range of measures. The city has developed a 6km safe cycling route serving 40 schools, and launched the 'Cento Strade 30' initiative, creating 30kph speed zones and traffic-calming measures around 100 school streets to improve child safety. Milan's 'Open Squares' project has transformed 57 underused urban areas into vibrant, pedestrian-friendly spaces as of mid-2025. Additionally, the city has implemented 25 new 'School Streets' to further improve the environment around schools.
Cities are also taking important steps to **promote transport electrification**, with 32 signatory cities implementing key measures – up from 29 in 2023 – including charging infrastructure, electric vehicle-ready building codes, scrappage incentives, congestion or parking discounts, and the electrification of municipal fleets. A total of 33 signatory cities are now procuring only **zero-emission buses**, or are working actively to achieve that goal – up from 31 in 2023. **Berlin** has already achieved its goal of procuring only emission-free buses, with a total of 228 electric buses out of 1,565 by 2024 – 14.5% of the city's total fleet. By 2026, the city is on track to have 22% of its bus fleet electrified. **Addis Ababa** has a fleet of 100 electric buses in operation, with plans to introduce electronic ticketing and real-time tracking systems to promote its use. The Toei Bus in **Tokyo**, introduced in 2017, became the first commercially available fuel cell bus in Japan. As of April 2024, Toei Bus operated 75 fuel cell buses, and has a target of 300 electric buses by 2030 and 1,300 by 2035, including private fleets.

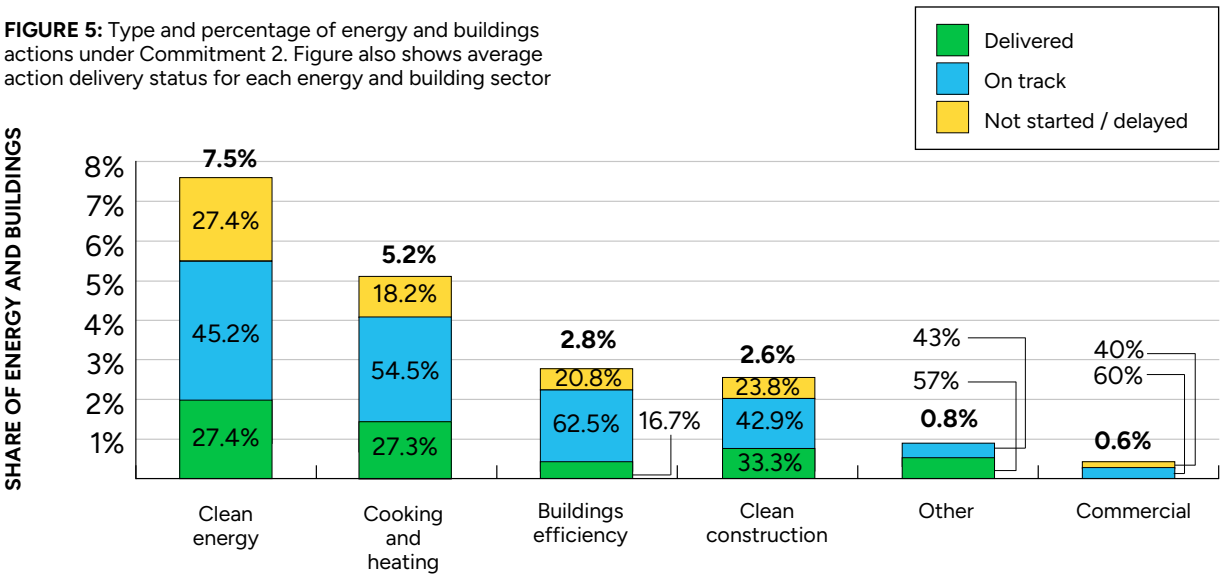
CITY ACTION TO CLEAN IT'S ENERGY SOURCES AND BUILDINGS

Cities are increasingly tackling air pollution in the **energy and buildings** sectors, with 36 signatory cities delivering more than 160 actions, representing 19.4% of committed actions under Commitment 2. These efforts have included the deployment of clean energy production city-wide, particularly in municipally owned buildings; supporting the transition away from solid and fossil fuels for cooking and heating; improving efficiency in buildings; and expanding electricity access to informal settlements. Cities are also addressing air pollution generated by construction activities through stricter enforcement, dust control and zero-emissions machinery.

An example of action in this sector is cities' efforts to transition to cleaner cooking and heating for families. Notably, 21 signatory cities have either made progress or successfully implemented actions to eliminate the use of fossil fuels or solid fuels for heating and cooking – up from 17 cities in 2023.

Since 2008, **Seoul** has facilitated the installation of 1.22 million cleaner household boilers and 6,857 low-nitrogen oxides (NO_x) burners in commercial facilities, promoting the adoption of more environmentally friendly options. A total of 178 clean construction sites have been in operation since 2022 through voluntary agreements with major developers, with measures such as mandatory registration of construction vehicles, road-cleaning, and use of low-emission construction equipment. In **Addis Ababa** a new Building Energy Efficiency Regulation is under legal review, designed to promote energy conservation and shift buildings away from biomass and diesel generators toward solar and battery systems.

FIGURE 5: Type and percentage of energy and buildings actions under Commitment 2. Figure also shows average action delivery status for each energy and building sector



Madrid © Eduardo Peralta

CITY ACTION TO REDUCE AIR POLLUTION FROM WASTE

Cities are also advancing action to tackle emissions from the **waste sector** – a key priority especially in global south cities. A total of 21 signatory cities are delivering almost 70 actions to reduce emissions from this sector – representing 8.4% of committed actions.

Cities are protecting residents' health by improving waste management and tackling harmful air pollutants being released from landfills and open dumping and burning of waste. Many cities are working to achieve universal waste collection. In 35 signatory cities, all waste generated within the city is being collected on a timely basis, and abandoned waste is transported to transfer stations, treatment centres or disposal sites, with no open dumping and/or open burning of waste in the city – up from 30 cities in 2023.

Freetown has significantly reformed its waste management, by introducing new bylaws, restructured collection, upgraded transfer stations and diversion of organic waste for composting and briquette production. These efforts will divert waste from landfills and reduce emissions from open burning and uncontrolled decomposition, leading to improved air quality and creating good green jobs. In **Accra** a new bylaw will complement national efforts to tackle air pollution by targeting high-polluting activities such as the open burning of waste, through stricter regulation enforcement and penalties for violations.

EQUITABLE AND INCLUSIVE CLEAN AIR ACTION ACROSS SECTORS

Cities are implementing the above-mentioned clean air actions across diverse sectors, while delivering on key opportunities to support thriving and resilient communities.

Signatories are **reducing health inequities** and ensuring benefits from clean air are felt by everyone. Since signing the accelerator, **Salvador** has reduced $PM_{2.5}$ levels by 2.3% and NO_2 levels by 4.2% through targeted efforts to address major sources of emissions. As a result, improvements in public health – such as fewer respiratory illnesses, asthma cases, and hospital visits related to air pollution – are estimated to have saved over US$5.5 million. In **Seoul**, city action has led to air quality improvements that prevented more than 33,000 premature deaths and 3 million hospital visits since 2008. **Houston** is monitoring air pollution to protect the health of residents in high-risk neighbourhoods near refineries. Houston's initiatives include its Enhanced Air Monitoring Project, launched in 2025 and funded by the Environmental Protection Agency (EPA). The Houston Summer Surveillance dashboard tracks heat-related illness and other health conditions through the summer months, which are exacerbated by heat, air pollution and pollen, helping assess public health risks during extreme weather.

Signatory cities are **improving accessibility, wellbeing, and resilience** by improving access to inclusive public places and services, promoting active mobility, and deploying green infrastructure, all of which leads to improved physical and mental health. In **Mexico City**, the 2019 Strategic Plan for Gender and Mobility was drawn up with the aim of improving travel conditions of girls and women on different modes of public transport. **Milan** is investing in public transport improvements for people with disabilities, and carrying out works to remove architectural barriers in all metropolitan stations by 2026, when the city will host the Winter Olympics and Paralympics.

Cities are **delivering fair, green jobs and a just transition** in key sectors such as transport, energy, and waste, by investing in skills and workspace improvements. **Medellín** is committed to delivering a fair transition towards circular, inclusive, and regenerative production and consumption models. Between July 2024 and March 2025, 171 signatories coordinated to produce the 'Green Manifesto Alliance for the Circular Economy', committing to reduce solid waste, strengthen reuse and recycling, reduce polluting emissions, and improve energy efficiency. Of these signatories, 45 have committed to create good, green jobs in their organisations. **Austin** City Council passed a resolution in July 2024, to create a Comprehensive Climate Implementation Programme to accelerate progress toward the city's net-zero goal. The city used C40's Action Selection and Prioritisation (ASAP) tool to assess several hundred municipal and community-sourced actions based on equity, health, housing, jobs, and feasibility. The resulting two-year implementation plan will reduce emissions and deliver air quality co-benefits, potentially cutting up to 2.3 million tCO_2e by 2040.

Cost of living challenges have hit residents everywhere, and cities are providing financial support for heating and energy costs, while also helping people save on healthcare. **Warsaw** has provided nearly full cost subsidies for the elimination of old, smoke-belching stoves in households, worth about PLN 91 million (US$24.8 million). This has helped reduce the number of old stoves in the city from around 15,000 to just 1,508, improving people's health and energy efficiency. **Lagos** is developing a comprehensive training programme focussing on air quality data and its implementation in relation to health information, building skills to support workers through education and awareness.

Lastly, cities are **building coalitions of clean air advocates** and allies to foster collaborative air quality governance that empowers communities, improves awareness and strengthens participation through inclusive decision-making. **Jakarta** is using its extensive air quality monitoring network with over 100 stations to map exposure levels and social vulnerability. This will allow the city to understand which neighbourhoods are most affected by pollution and will benefit most from new policies and regulations, which are being developed with the involvement of local communities and small business owners. **Phoenix** delivered a hackathon in 2024 that created space for teams to develop innovative air quality solutions which the city will implement. The hackathon attracted 23 participating teams and an audience of 100. The winning team was chosen by a panel of judges including air quality experts from Arizona State University, researchers, a representative from Mom's Clean Air Council, and other local stakeholders, and the initiative involved collaboration with high schools to monitor air pollution and empower students to improve local air quality.

Medellín, Colombia - Green Corridors project_ © ACI Medellín - Alcaldía de Medellín - C40

PRIORITIES PER REGION

Cities are delivering clean air action worldwide, the regional distribution of signatory cities is as follows: Europe accounts for the largest share with 28% of all signatory cities; Africa represents the second largest share with 22%; Latin America follows with 18%; North America with 12%; and East and Southeast Asia and Oceania, along with South and West Asia, each represent 10% of cities.

They have adopted a diverse range of strategies to combat air pollution, tailored to their unique regional contexts, local priorities, and jurisdictional powers to address air pollution sources.

Across East and Southeast Asia and Oceania, Europe, Latin America, and North America, transport-related initiatives remain a central focus.

Vehicle electrification is the most commonly implemented action across cities in East and Southeast Asia and Oceania, Europe, and North America.

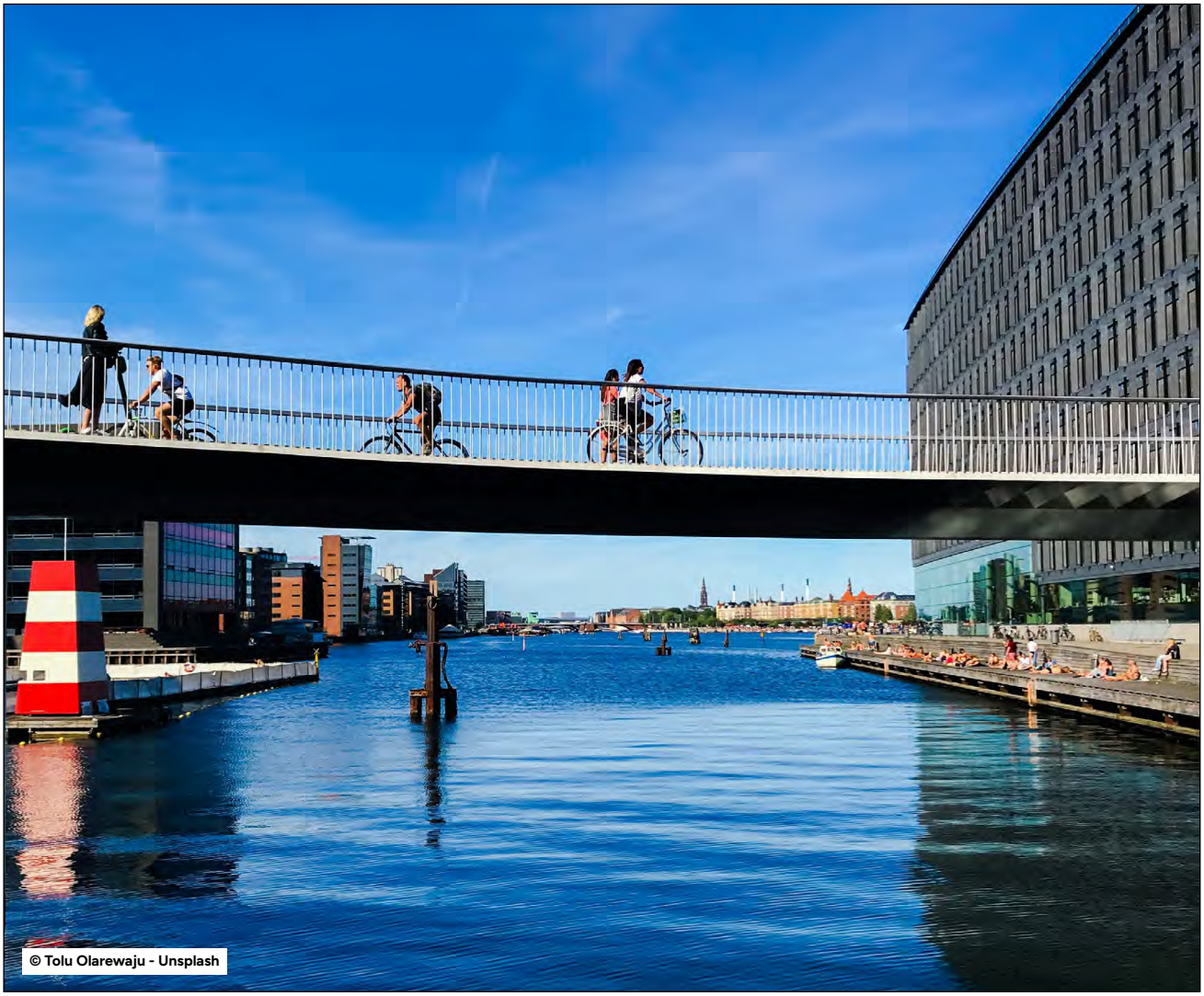
Bus fleet electrification is a key priority in cities in Latin America and North America.

Fuel and vehicle standards are key areas of progress in cities in East and Southeast Asia and Oceania, as well as Latin America.

Clean Air Zones are the second most commonly implemented action in Europe.

Mass transit expansion is a significant area of focus in Africa, Latin America, and North America, while expansion and promotion of active travel is a top priority in East Southeast Asia and Oceania, Europe and Latin America.

In Africa and Southwest Asia, the most commonly delivered actions were focused on the improvement of **waste management** systems and the reduction of emissions from the sector. Another primary focus in both regions was the expansion of **clean energy** adoption, including the phasing out of fossil fuels and/or solid fuels for cooking and heating.



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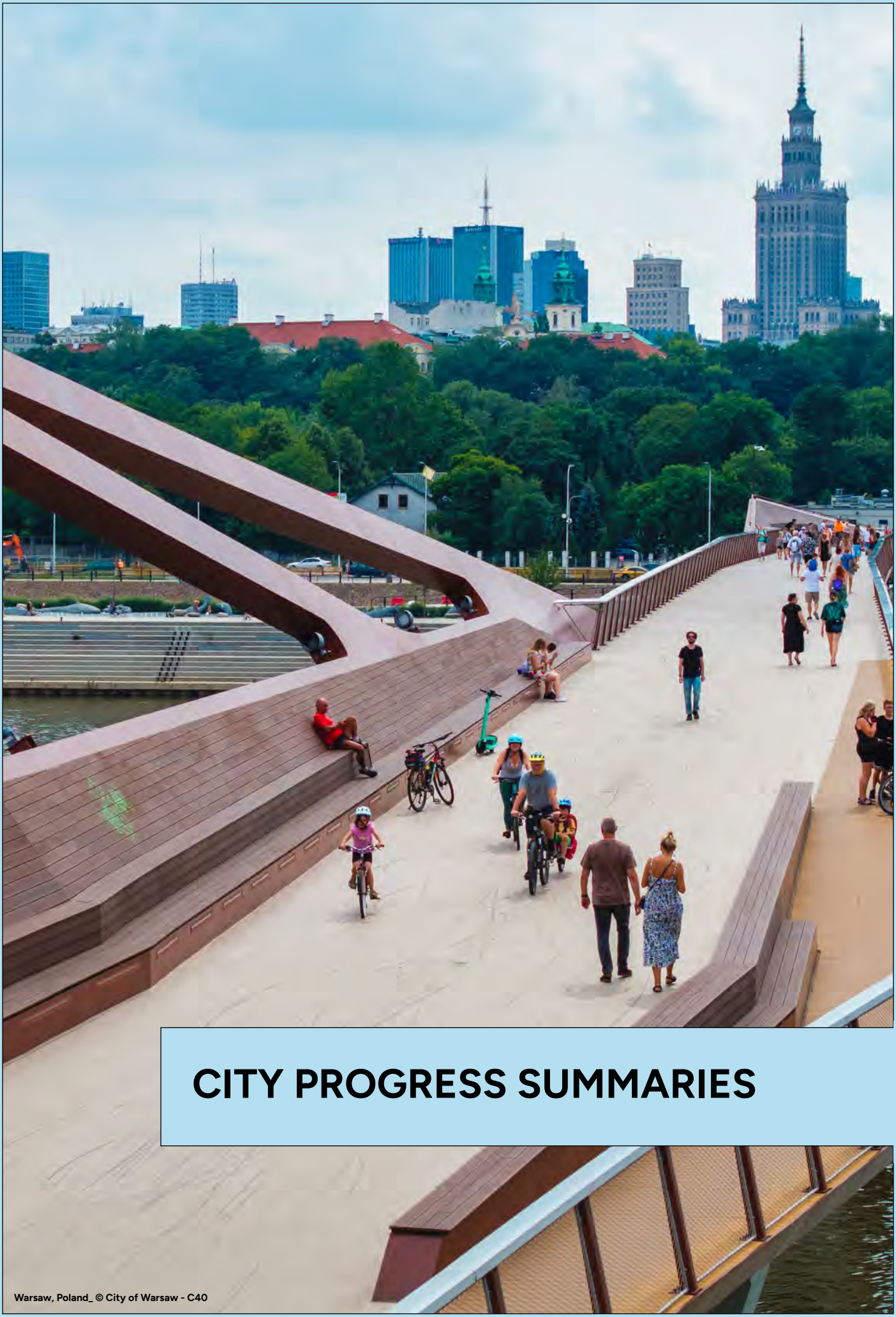

CITY PROGRESS SUMMARIES

Warsaw, Poland_ © City of Warsaw - C40

SIGNATORY CITIES IN

AFRICA

ACCRA, GHANA

Accra has made significant progress in air quality management since September 2024, advancing its commitments under the Clean Air Accelerator and broader 2030 sustainability goals. As Ghana's capital continues to experience rapid urbanisation, air pollution has remained a critical challenge. However, recent initiatives have strengthened air quality action plans, enhanced community engagement, and introduced innovative policies to mitigate environmental health risks.

Since September 2024, Accra has achieved significant success in developing localised air quality action plans throughout its metropolitan and municipal areas. These plans have provided tailored pollution control measures to address vehicular emissions, industrial pollution, and waste burning. By ensuring that different zones within the city have customised strategies, Accra has improved enforcement and air quality monitoring efforts at the community level. With the support of Breathe Cities, Accra installed 67 air quality sensors, providing the city with air quality data that is local and real-time.

Accra has stepped up its community engagement and policy advocacy efforts, recognising the crucial role of public participation. The city has intensified awareness campaigns that focus on behavioural change and stakeholder engagement. Education programmes have encouraged businesses and individuals to adopt cleaner transportation methods, such as electric vehicles and public transit. The government has also shared air quality information via local media channels to foster public awareness.

Accra has also conducted comprehensive baseline emission assessments for data-driven interventions to ensure a science-based approach to air quality improvement.These studies have helped pinpoint sectors contributing the most to air pollution, guiding targeted interventions. To help meet its 2030 commitments, Accra aims to scale up real-time air pollution tracking by installing more air quality monitoring stations in densely populated and high-risk areas. By integrating digital technology and remote sensing tools, authorities can monitor pollution fluctuations more effectively and adjust mitigation strategies accordingly. The city is also planning to introduce Low-Emission Zones (LEZs), which will restrict high-polluting vehicles and industries from operating in designated areas. These zones will require strict compliance with emissions standards, thereby curbing harmful pollutants from traffic and industrial operations.

Accra is prioritising urban tree planting and sustainable land use policies to help reduce the impacts of air pollution. Projects focusing on green buffer zones, rooftop gardens, and greener road infrastructure will help mitigate pollution while enhancing climate resilience.

Accra's ongoing commitment to air quality management and sustainability reflects its dedication to public health and environmental protection. With a comprehensive approach encompassing policy reforms, community participation, technological advancements, and infrastructure investments, the city is on a strong trajectory toward achieving its 2030 clean air goals.

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ADDIS ABABA, ETHIOPIA

Addis Ababa is making steady improvements to its air quality, although $PM_{2.5}$ levels remain above both national and World Health Organization (WHO) air quality guidelines. The city is maintaining its current sensor network and expanding it by procuring new equipment to improve spatial coverage and replace outdated air quality sensors. A number of air quality monitoring efforts are being undertaken by the Addis Ababa EPA, universities, the US Embassy, and local researchers. Universities are developing locally built sensors, which spark public interest in low-cost sensors for research. These partnerships will support a more coordinated, real-time, and comprehensive monitoring system.

A hyperlocal pollution study will take place in 2025–26 under the C40 African Cities for Clean Air initiative, to assess pollution equity impacts and guide targeted actions. Aligned with its Climate Action Plan (CAP), Air Quality Management Plan (AQMP), and the C40 Clean Air Accelerator, Addis Ababa is targeting emissions from major sources such as transport, buildings, waste, and construction.

The city is implementing a comprehensive sustainable mobility plan. A fleet of 100 electric buses is already in operation, with plans to introduce electronic ticketing and real-time tracking systems. To promote non-motorised transport, a strategy is underway to develop 600km of walkways and 200km of bike lanes, of which 40km were completed in 2024, and 132km are planned to be completed by the end of 2025. Complementary initiatives include creating green spaces, installing shade, and cleaning rivers to make the city more walkable and cyclable. To support these efforts, a vehicle emission directive is in effect, and electric vehicles are expected to reach a 25% market share by 2030.

Addis Ababa is promoting energy conservation through a new building energy efficiency regulation, which is under legal review, and is also expected to shift buildings away from biomass and diesel generators toward solar and battery systems. The city is also promoting efficient cookstoves and LED street lighting upgrades.

Addis Ababa is also expanding recycling and composting facilities, reducing open burning, and drafting a dust pollution control directive to manage $PM_{2.5}$ and other pollutants from waste, construction, and other activities.

Addis Ababa is committed to a multi-sectoral and equity-focused approach, but challenges remain in enforcement, funding, and engagement. Sustained investment and capacity-building will be crucial to achieve long-term air quality and public health goals.

DAKAR, SENEGAL

Since the last C40 Clean Air Accelerator 2024 report, the city of Dakar has made significant advances in its efforts to improve air quality and meet the accelerator commitments.

Dakar has completed the development of its first air quality management plan, to help establish baseline levels for pollutant emissions. The city is focusing on reducing emissions from the main sources of air pollution identified during the baseline establishment process.

The strategies to reduce emissions, already implemented or underway, are aligned with the ambitious initiatives identified in the climate plan, along with the central government's policy to promote renewable energy, improve mass transportation, and minimise the health risks associated with urban pollution. Dakar has installed six mini-solar power plants, in sites such as places of worship, hospitals, and schools. This is part of the mayor's development strategy – 'Dakar Que Nous Partageons' or Dakar, What We Share.

Dakar benefited from technical assistance from C40 to assess the impacts of the implementation of its Bus Rapid Transit (BRT) project, and the urban transport system renovation programme. The results of this study were shared in the form of a case study with stakeholders during a capacity-building and experience-sharing workshop with C40 African cities.

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EKURHULENI, SOUTH AFRICA

Ekurhuleni is making significant progress in improving air quality through a variety of initiatives and projects. To achieve its goals, the city is collaborating with private businesses, Ekurhuleni Metro Parks and various local school communities. Notable achievements in 2024 included the successful launch of pollution awareness campaigns in schools, engaging the City's Communication and Marketing Department and hundreds of school learners across various areas, to raise awareness of air quality and encourage community involvement.

Sources of pollution from informal settlements including unpaved dusty roads, the burning of waste, and the use of fossil fuels for cooking and space heating, are among the most problematic air pollution sources in the city. Ekurhuleni's informal settlement management draft bylaw has been developed with the aim of formalising existing informal settlements and preventing further unplanned growth. The bylaw is still at a draft stage, while the city continues to formalise some of the settlements and bring improved quality of life to residents. Actions include reducing residents' exposure to indoor and outdoor air pollution by relocating them in neighbourhoods with electricity and tarred roads. In addition, a sustainable integrated waste management strategy that also focuses on informal settlements has been developed, to address illegal dumping and improve waste management within these communities.

Ekurhuleni's key achievements also include the establishment of an industry stakeholder engagement structure, introducing monthly meetings with regulated industries to discuss air quality related matters, such as emission reduction plans and air quality emerging threats. The city has also introduced a memorandum of understanding with higher institutions of learning, to integrate a learning programme where students from universities are exposed to environmental and air quality related tasks and duties.

Next steps and future planned action to tackle air pollution in the city include enhanced air quality monitoring to better understand impacts of air pollution across the city.

DURBAN (ETHEKWINI), SOUTH AFRICA

The city continues to plan and implement clean air action. A key achievement since the last report has been the approval by the council of the controlled emitters policy, first drafted and submitted for approval in 2024. The preparation of the policy put residents at the centre through extensive stakeholder engagement. The policy will address emissions from heavy and light industry, as well as commercial facilities that use small boilers for their energy requirements. This legislation will tackle emissions sources that were not being addressed by national legislation.

The city has also made strides in dealing with emissions from waste burning. The city has been working closely with communities, engaging with them on a regular basis to educate residents about the consequences of waste burning and the air pollution it generates. The city's air quality section is also partnering with the unit responsible for waste to ensure illegal dumpsites are cleaned up, and to eradicate waste burning here too.

Traffic emissions are also a huge source of air pollution in the city. The city is working to find new funding sources to support its Transit Orientated Development strategy, which will address emissions from transportation and increase the use of non-motorised transport across the city. This will reduce the impacts of air pollution on communities living close to congested roads.

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FREETOWN, SIERRA LEONE

Freetown City Council is committed to addressing the effects of air pollution. The city is planning to procure 15 low-cost sensors to be installed at various locations within Freetown municipality. The city has worked with the C40 Air Quality team to select a suitable supplier for the equipment, obtain technical assistance for capacity building of council staff, and engage with key stakeholders on the importance of air quality measures.

Freetown has significantly reformed its waste management system, with new bylaws, citywide restructuring of collection, and upgrades to six transfer stations that now serve as hubs for aggregation, sorting, and future composting and recycling. A new green waste strategy is driving the diversion of organics into composting and briquette production, creating alternatives to landfill disposal. Standardised procedures and pricing are helping to establish a consistent, enforceable system that supports these efforts, reducing emissions from dumpsites, cutting the volume of waste disposed of, and eliminating harmful emissions from open burning and uncontrolled decomposition.

Freetown has also secured funding to support its ambitious Freetown The Tree Town campaign. The initiative now aims to plant, digitally track, and grow 5 to 7 million trees by 2028, helping the city adapt to the impacts of the climate crisis while improving residents' quality of life.

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JOHANNESBURG, SOUTH AFRICA

The City of Johannesburg is committed to achieving its 2030 air quality targets. Since 2022, air pollution levels have slightly improved for gaseous pollutants, reducing sulphur dioxide (SO_2) levels by 2.5%. $PM_{2.5}$ and PM_{10} levels continue to be a challenge for the city, with these pollutants not yet stabilising. While the city continues to work on overcoming monitoring challenges, most of the stations are not operating optimally due to procurement delays.

Johannesburg is planning to expand its air quality monitoring network by adding 22 new reference grade monitors (analysers), bringing the total eight monitoring stations to operational state. The placement of these monitors was guided by equity considerations to ensure comprehensive data collection across all communities, particularly in historically marginalised and overburdened areas. The city is further working with partners to create a hyper-local low cost sensor network with more than 50 new low cost sensors. This network will further improve access to air quality data and stimulate local action in communities.

There is still a concerted effort to ensure improvements to address major sources of emissions across the city, through policies and programmes to address the top causes of air pollution emissions. Supported by Breathe Cities, Johannesburg is building a powerful evidence base for clean air action through citywide surveys and a first of its kind study in South Africa to pinpoint sources of pollution from vehicles.

Johannesburg conducted an air quality perception survey of 3,000 residents. The purpose of the survey was to inform the development of a Clean Air Zone (CAZ) policy tailored to Johannesburg's unique environmental and socio-economic challenges.

The City of Johannesburg is working on transitioning to cleaner energy sources and is actively pursuing off-grid solar solutions to enhance electricity supply and promote renewable energy. This includes initiatives like micro-grids for communities, streamlined processes for household solar installations, and plans to purchase electricity from independent power producers (IPPs). City Power is implementing micro-grids, such as a 1MVA (Megavolt-Ampere) solar grid in Alexandra, to provide reliable electricity to specific communities. These micro-grids can operate independently from the main grid, offering a more resilient power supply.

The City of Johannesburg actively promotes public awareness through campaigns and engagement activities. During Clean Air Week in September 2024, the city introduced clean air campaign #CleanAirJozi, which encouraged collective action to improve air quality in Johannesburg.

During Environment Month, June 2025, the city partnered with C40's It's in the Air campaign to launch a youth-focused social media activation which culminated in a fun walk in nature. Content highlighted the city's ongoing efforts to reduce pollution and continue to build awareness under the #CleanAirJozi brand.

Johannesburg will also work to continue to enhance air quality monitoring to better understand impacts of air pollution across the city.

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LAGOS, NIGERIA

The City of Lagos is committed to achieving its air quality targets of an annual average of 25 µg/m³ (micrograms per cubic metre) in line with the WHO air quality guidelines. Air pollution levels in the city have significantly improved since 2024, with $PM_{2.5}$ levels reduced from 46 µg/m³ to 29 µg/m³ and nitrogen dioxide (NO_2) levels at 63.94ppm (parts per million). These improvements result from targeted efforts to address major sources of emissions across the city. This action is improving public health, reducing respiratory illnesses, asthma cases, and hospital visits related to air pollution, as well as healthcare costs associated with pollution-related diseases.

The City of Lagos has expanded its air quality monitoring network since September 2024 by adding 18 new monitors, bringing the total to 60. The placement of these monitors was guided by equity considerations to ensure comprehensive data collection across all communities, particularly in historically marginalised and overburdened areas. This network has enhanced data availability for policy making. The city is also working to conduct a comprehensive training programme focused on air quality data appreciation and implementation in relation to health information.

The city has developed a comprehensive report on integrated greenhouse gas (GHG) and air quality emissions inventory, health impact analysis and air quality monitoring guidance for Lagos in April 2024 which shows the percentage distribution of GHG and each air pollutant among the major source types respectively.

To further control pollution sources, the city has implemented programmes and incentives through the Presidential Compressed Natural Gas Initiative (PCNGI) to encourage conversion from dirtier fuels to reduce emissions under municipal authority.

To further improve coordination and delivery of clean air action, a dedicated cross departmental team for effective coordination has been established to integrate and institutionalise air quality actions across key city departments.

Next steps and future planned action to tackle air pollution in the city include implementing the first phase of a Low Emission Zone (LEZ) in the next two years. A plan has been announced to implement a LEZ, prioritising pollution reduction in vulnerable and marginalised communities.

Lagos is working to reduce emissions from transport and has also announced its intention to add cycle lanes to major roads in the city and incorporate them into new road construction projects. The city is also working on the electrification of its bus fleets, with the introduction of two new electric buses and aiming to introduce 50 buses by the end of 2025; as well as continuing work to expand public transport and electric charging infrastructure.

The city is also working on a clean energy transition through policies like Nigeria's Energy Transition Plan, and the National Clean Cooking Policy to phase out fossil fuels for cooking and heating in residential and commercial buildings.

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NAIROBI, KENYA

Nairobi has made progress in its air quality monitoring systems by increasing the number of low cost sensors – to better track pollution hotspots, inform policies, and protect public health through data-driven action. Part of this expansion is supported by Breathe Cities, with 50 new sensors for the first-ever city-owned air quality monitoring network. Nairobi is planning to bring the total number of monitors in the city to over 100 units. The city also has access to two reference grade monitors installed in its facilities.

Nairobi is committed to cleaning its air, and has worked with partners to embed its air quality monitoring portal on its website to improve residents' access to air quality data. The city has embarked on the development of a new air quality action plan, together with an air quality communication strategy.

The City of Nairobi has a fully established climate change and air quality unit under the environment department working to implement the needed actions to reduce emissions. In addition, the city has formalised the Nairobi Air Quality Working Group (N-Air), co-chaired by Nairobi City County Government, bringing together multi-sectoral representatives for comprehensive knowledge sharing and resource coordination. The recently announced air quality act will be solidified for implementation through the ongoing development of comprehensive air quality regulations. This powerful legal framework will set emission limits and pave the way for ambitious targets to reduce pollution, creating a healthier future for all residents.

Nairobi intends to carry out air quality baseline mapping once its air quality regulations have been developed and limits have been set for different emission zones. The regulations are at an advanced stage, awaiting publication for public participation. Following this process, the city will then set ambitious targets to reduce air pollution.

Nairobi has continued to work with other sectors to advocate for more electric mobility on three wheeler and two wheeler vehicles to help reduce emissions. The city has also expanded the non-motorised transport road network and is keen to introduce further improvements. It has a dedicated team working on renewable energy legal frameworks to support adoption and utilisation in the city. Looking ahead, the city intends to develop low emissions pathways, and carry out hyperlocal mapping to inform impacts of air pollution in the city.

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TSHWANE, SOUTH AFRICA

Since September 2024 the City of Tshwane has focussed its efforts on engaging communities and raising public awareness about air pollution and its impacts.

The city conducted a two-day vehicle emissions testing campaign in October 2024, aimed at educating residents about air pollution and informing them of the upcoming air quality bylaw.

Nine air quality education and awareness events were held with schools and higher education institutions, helping to build long-term understanding and commitment to achieving cleaner air across the city.

The city also issued 100% of its atmospheric emission applications within the required timeframe, in compliance with the National Environmental Management: Air Quality Act.

The city is collaborating with the partners to review and finalise its air quality management plan (AQMP). This partnership also supports expanded Air Quality Education and Awareness programmes to further strengthen community engagement.

Looking ahead, Tshwane is working to secure funding for the deployment of low-cost air quality sensors to enhance and expand local air quality monitoring. The new AQMP will be finalised and submitted to the City Council for approval.

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SIGNATORY CITIES IN

EAST SOUTHEAST ASIA AND OCEANIA

JAKARTA, INDONESIA

Jakarta has expanded its air quality monitoring network by adding 83 monitoring stations, bringing the total to over 100. In addition, Jakarta has partnered with Breathe Cities to introduce further low-cost sensors.

To increase transparency and public access to information, Jakarta has also launched a new air quality data portal – managed by the Provincial Government of DKI Jakarta through the Environmental Agency.

Jakarta is also addressing cross-border air pollution through active interregional collaboration with Bekasi City, South Tangerang City, and Bogor City, in coordination with national ministries. Additional cooperation is being developed with Bekasi Regency, Bogor Regency, Depok City, Tangerang City, and Tangerang Regency.

Under its Transport Demand Management Strategy, the city has established seven park-and-ride facilities at Lebak Bulus, Ragunan, Kampung Rambutan Terminal, Pulo Gebang Terminal, Kalideres, Pinang Ranti Terminal, and PGC Cililitan.

To encourage a shift from private vehicles to public transportation, Jakarta has significantly expanded the Transjabodetabek, a regional Transjakarta service that connects the capital with surrounding metropolitan areas. Since February 2025, under the leadership of Governor Pramono Anung, the network has been expanded from a few pilot routes to 14 active corridors with affordable fares, mode integration, and regional collaboration with Bekasi, Depok, and Tangerang. Another strategy is to provide free public transportation access for 15 groups.

Jakarta has continued its transition toward a zero emission bus fleet. As of mid-2025, 300 battery electric buses have been integrated into the Transjakarta fleet. A mandate for 100% zero emission procurement has been adopted ahead of the 2025 target. By 2026, Jakarta expects to operate more than 1,400 electric buses, out of an estimated 4,000 total buses.

Over the next two years, Jakarta will further expand its air quality monitoring network and develop an Emergency Action Plan based on early warning systems to protect residents during high-exposure periods in the dry season. The city will also continue to promote public transport use through transit-oriented development, expanding its metro (MRT), bus rapid transit (BRT) and light rail transit (LRT) systems, and implementing integrated Low Emission Zones.

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QUEZON CITY, THE PHILIPPINES

Since September 2024, Quezon City has made significant strides in strengthening air quality management through new policies, projects and community engagement initiatives.

The city is implementing its Air Quality Management Plan. Two key pilot projects include the Electric Vehicle Transition and Fleet Management system integrates city-owned vehicles into a fleet system and evaluates charging station locations. The Bike-to-School Research Study is developing a school-centred active transport map for safe walking and cycling, with consideration of the needs of people with disabilities. The city is also developing School Response and Suspension Guidelines for Air Pollution Episodes, to create standardised protocols for schools during air pollution events, and the Quezon City Green Zone Pilot Project to create sustainable areas with improved air quality through green infrastructure and policies.

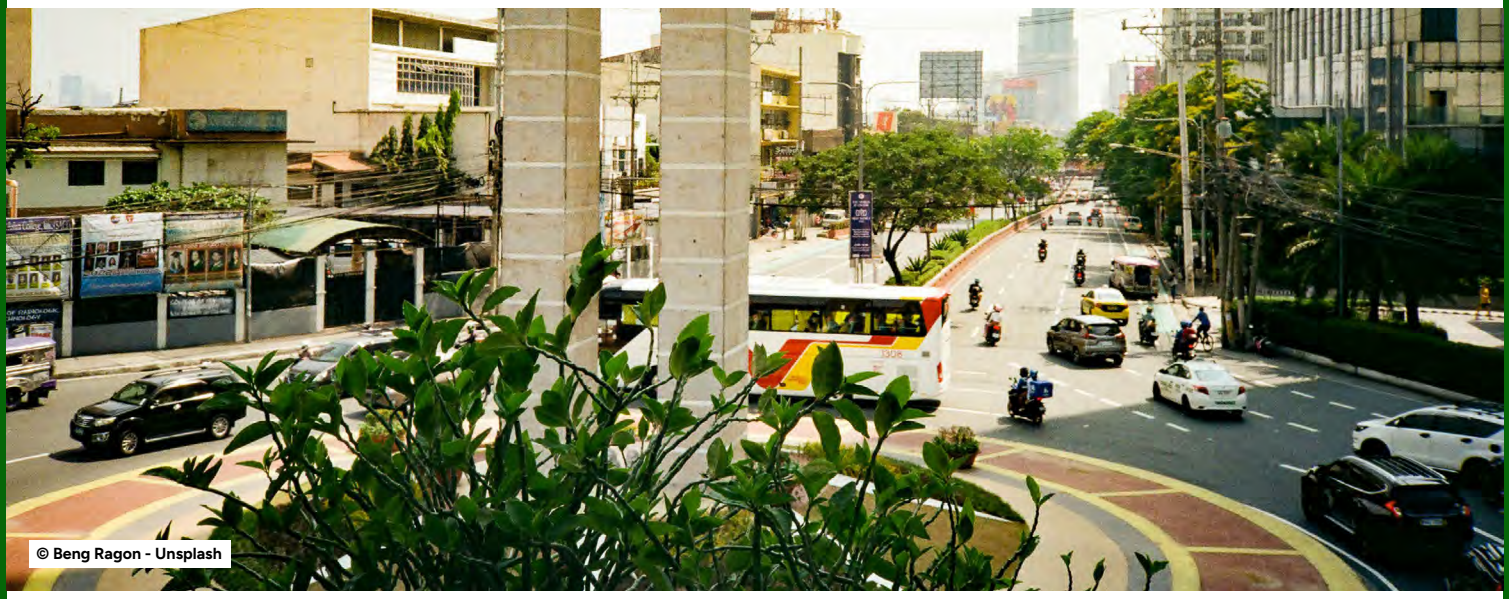
To reduce transport-related emissions, the city has procured 23 hybrid vehicles and eight electric buses. It is expanding bike lane networks and sidewalks under its Active Mobility Master Plan, while deploying bike patrols to ensure users' safety. The city is also doubling the number of parks and green spaces, enriching its tree cover through planting activities, creating community gardens, and rehabilitating degraded spaces.

Quezon City is integrating air quality data into local development plans and conducting air quality dispersion modeling and health impact assessments to inform targeted measures. Public awareness campaigns continue through the government's website and social media channels, supported by new educational materials and community workshops such as the Clean Air Public Forum (#CleanAirforQC).

To enhance monitoring, the city is developing an Air Quality Risk Analysis System for automated reports, real-time alerts, and data-driven policy development. A call for Quezon City Advocates for Cleaner Air was launched to encourage residents to report pollution-contributing activities. An Air Quality Monitoring Centre is being procured to integrate air quality and weather data with live CCTV feeds for real-time monitoring and targeted interventions.

Two new policies are being introduced to advance cleaner air – the Clean Air for Schools Ordinance, prohibiting smoking and vehicle idling within 100 meters of schools, which has recently been passed, and Ordinance Number SP-3345, S-2024 establishing the Sunday Car Free, Carefree Tomas Morato programme to promote active mobility and environmental wellbeing.

The City Government also contributes to two C40 Clean Air Network working groups – Equity in Clean Air Action and Clean Air Zones in Global South Cities – and is implementing the OASIS Schoolyard Programme, supported by the Resilient Cities Network and Temasek foundation, to transform three selected schoolyards into green, inclusive spaces resilient to heatwaves and flooding.



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SEOUL, REPUBLIC OF KOREA

The city launched the Cleaner Seoul 2030 plan in 2022, building on the success of the Clean Seoul 2010 initiative, which reduced PM_{10} concentrations by 20% – from 58 µg/m^3 in 2005 to 47 µg/m^3 in 2011. This contained a new target to reduce $PM_{2.5}$ concentrations to 13 µg/m^3 by 2030, and protect vulnerable populations. The plan includes 50 specific measures across five strategic areas, focusing on emissions found in areas essential to everyday life, including residential areas and near schools.

The city is promoting the transition of parcel and food delivery vehicles to zero-emission models, encouraging the operation of clean construction sites, and piloting the 'Climate Card' during the seasonal air quality management period, to foster voluntary participation from residents and businesses. Through these efforts, the city achieved its lowest-ever recorded annual $PM_{2.5}$ concentration of 17.6 µg/m^3 in 2024.

A Seoul Institute study estimates these air quality improvements have prevented more than 33,000 premature deaths and 3 million hospital visits since 2008.

Seoul operates a comprehensive air quality monitoring network of 50 stations that measure pollutants in real time, including 25 urban air monitoring sites, 15 roadside monitoring sites, and 10 multi-level monitoring sites. Data are publicly available through the Seoul Air Quality Information portal, supporting transparency and accessibility for all residents.

Transport decarbonisation remains central to the city's clean air strategy. Since 2003, more than 520,000 old diesel vehicles have been retrofitted or replaced. Between 2018 and April 2025, Seoul deployed 1,751 electric buses and 69 hydrogen buses to improve air quality and enhance public bus service standards. Seoul has increased the availability of charging stations by over 52,000, allowing up to 290,000 vehicles to be charged – more than a 3.5-fold increase. The number of EVs per charger improved from 1.94 to 1.14, significantly enhancing public access to charging.

In 2017, the city designated 18 neighbourhoods within the city centre as Green Transportation Zones, and began restricting grade 5 vehicles from entering these zones in December 2019. The number of grade 5 vehicles decreased by 87.9% between December 2019 and April 2025. Total traffic volume in the area also decreased by 13.3% during the same period.

Seoul is taking complementary actions to target emissions from buildings and industry. More than 1.2 million cleaner boilers have been installed in homes and 6,800 low-NOx burners have been installed in commercial facilities since 2008.

Across the city, 178 clean construction sites have operated under voluntary agreements with major developers since 2022. Key practices include mandatory registration of construction vehicles, road-cleaning, and use of low-emission construction equipment. The city has also supported the reduction of volatile organic compounds (VOCs) in small-scale laundries, distributing 36 clean machines, and installed IoT-based monitoring devices at 484 small industrial sites to track and control air pollution in real time. These devices measure and transmit real-time operational and status data of prevention and emission facilities.

Seoul's Seasonal Fine Dust Management Programme has been running from December until March since 2019 to enforce temporary measures during high-pollution periods.

Over the next two years, restrictions on high-emission diesel vehicles will expand to include Grade 4 vehicles in Green Transport Zones and Grade 5 vehicles subject to city wide year-round limits by December 2026.


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SYDNEY, AUSTRALIA

Since joining the C40 Clean Air Accelerator, the City of Sydney has conducted a successful trial of low-cost air quality monitoring systems. It secured support from the New South Wales State Government to install three regulatory-grade monitoring systems – the first in 2019, the second in 2022, and the third in May 2025.

Data collected from these stations and (now defunct) local sensors confirmed that the City of Sydney maintains consistently high air quality, with particulate matter only exceeding guidelines when there are bushfires.

According to the New South Wales air quality categories (AQC) system, Sydney's air quality is consistently rated 'Good' – the cleanest rating. The AQC is determined by measuring $PM_{2.5}$, PM_{10}, ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulphur dioxide (SO_2), and visibility measurements.

To maintain and enhance the city's air quality, Sydney will continue to support active transport as the first mobility option, by providing and improving cycling and walking infrastructure, pedestrianising roads, and encouraging behaviour change.

Sydney's electrification of transport strategy is designed to supports electric vehicle uptake, fleet electrification, expanded charging infrastructure, and advocacy for electric buses in partnership with the New South Wales Government.

The city's Greening Sydney strategy continues to expand canopy cover and green spaces, delivering cleaner air alongside benefits for health and wellbeing and urban heat reduction.

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TOKYO, JAPAN

Since signing the Clean Air Accelerator in 2019, Tokyo has made substantial progress towards cleaner air, achieving the national environmental standard for $PM_{2.5}$ in the same year. The city set a new goal to keep annual $PM_{2.5}$ levels at or below 10 µg/m³ or less across all monitoring stations by 2030, a goal first achieved in 2021.

To reduce $PM_{2.5}$, and ozone (O_3), Tokyo is working to reduce volatile organic compounds (VOCs) and nitrogen oxides (NO_x) through a suite of coordinated actions. These include expanding the use of non-gasoline vehicles; promoting business and community voluntary participation through the Air Quality Improvement Promotion Project to Achieve Clear Sky; opening air quality data to link support innovation using 5G and other technologies; strengthening cooperation with surrounding prefectures and cities; and identifying VOC sources that contribute to ozone formation.

The Tokyo Metropolitan Government is leading the shift to zero-emission vehicles (ZEVs) in public fleets. The City's Toei Bus network introduced Japan's first commercially available fuel cell bus in 2017. As of April 2024, Toei Bus operates 75 fuel cell buses, with over 118 in service citywide, including private operators. Tokyo aims to deploy 300 electric buses by 2030 and 1,300 buses by 2035.

To expand charging infrastructure, Tokyo strengthened its Building Environmental Plan System and launched a new Building Environmental Report System effective April 2025, requiring new buildings to include ZEV charging stations. The Collaborative Council for Promoting the Spread of Charging Facilities in Condominiums, established in 2022, has already enabled 2,959 chargers to be installed in residential buildings as of March 2024.

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SIGNATORY CITIES IN

EUROPE

BARCELONA, SPAIN

In 2024, Barcelona recorded its lowest pollution levels since monitoring began, meeting European Union (EU) limit values at all official monitoring stations for the second consecutive year. Annual concentrations continue to decline, confirming steady progress toward cleaner air.

To build on this success, the city launched new campaigns highlighting the health impacts of air pollution to raise awareness among residents. The city also began developing an improved air quality forecasting tool with higher spatial and temporal resolution for residents.

In July 2024, the regional government (Generalitat de Catalunya) approved a new regional Air Quality Plan for Catalonia, to reach the new limit values defined by the EU. Barcelona is aligning its municipal targets with this vision for 2025 and 2027. This includes advancing Barcelona's Low Emission Zone (LEZ) and updating the short-term action plan for high levels of pollution. The LEZ, implemented in 2020, covers an area of approximately 95km² across the city and surrounding municipalities. It restricts weekday circulation between 7.00am and 8.00pm for older high-emission vehicles – gasoline vehicles Euro 2 or lower, or diesel vehicles Euro 3 or lower. With the new regulatory framework, by 2028 Barcelona will restrict vehicles with gasoline Euro 3 and diesel Euro 4 and 5.

Barcelona continues to expand active mobility, with 268km of bike lanes citywide – 20.6km have been added during the current mandate, with plans for an additional 12.4km planned by 2027.

Barcelona is also greening its public transport network. In partnership with TMB (Barcelona Metropolitan Transport), the city added 36 hydrogen buses in 2023 and 19 electric buses will be put out to tender by 2026. The TMB network includes 242 zero-emission buses (196 electric and 46 hydrogen), representing 25% of the total 1,065-stong fleet.

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BERLIN, GERMANY

Berlin continues to meet all European Union (EU) air quality standards, with nitrogen dioxide (NO_2) levels well below the limits across most roads since 2020. This success reflects sustained measures under Berlin's clean air plans and the support of C40. These include the Low-Emission Zone (LEZ), speed restrictions, bus fleet improvements, parking management, and major investments in cycling infrastructure and public transport. These have significantly reduced health risks for the city's 3.9 million residents.

Berlin maintains a close-knit network of 15 automatic air monitoring stations, three additional passive nitrogen dioxide (NO_2) sites, and modelling that maps air quality on a 50x50m grid. Recent projects include a vehicle licence plate survey to analyse emission classes, and an online air quality information service for residents that allows them to find out the average air quality outside their front door in the past year. A planning tool also allows users to model the environmental impact of specific traffic measures.

Berlin's new clean air plan will be approved shortly, creating legal certainty for air pollution control measures and compliance with new EU air quality limits for 2030. Planning work includes adapting the air monitoring network and estimating future emissions, as well as enhanced engagement with civil society, science and industry.

Mobility data from 2024's research project 'Mobility in Cities – SrV' conducted by the Technical University of Dresden shows a marked shift toward sustainable transport. Car use has fallen from 26% to 22% since 2018, while walking increased from 30% to 34%, and cycling and public transport remain stable at 18% and 26–27% respectively.

Berlin has already achieved its goal of procuring only emission-free buses well ahead of the target year of 2025. The city's bus fleet consists of 228 electric buses out of a total of 1,565 buses in 2024 – 14.5% of the total fleet. There are plans to increase this share to 22% by 2026, alongside further expansion of infrastructure. The city's charging infrastructure strategy supports rapid EV growth – with a planned expansion of charging capacity to 2 million kWh/d for a projected 400,000 electric cars in 2030. Of this, 20% will be on public roads, 26% in publicly accessible areas, and 54% in areas not accessible to the public. At the end of 2024, there were approximately 32,000 charging points in Berlin for around 80,000 electric vehicles. Around 5,000 of these were publicly accessible, and 3,200 of the 5,000 were in public spaces. Berlin is also promoting the switch to EVs in the taxi industry through subsidies and a charging pilot project, now moving into full roll-out.

Active mobility continues to grow. In 2024, a total of 23.6km of new routes were built or improved, with 24.3km under construction, and 84.9km in the planning stage – totalling 132.8km of cycle paths. Over 4,400 new bike racks were installed, more than half through the Bicycle Racks for Berlin subsidy programme.

The concept of temporary play streets is being implemented in all 12 districts of Berlin, where vehicle traffic is blocked one afternoon a week (usually March to October) to open up public street space for children to play and for neighbourhoods to meet. Since 2019, the number of individual dates has been rising steadily, with 280 dates in 56 different streets in 2024. The implementation is carried out by private individuals and is facilitated and supported by an association under guidelines by the Senate Administration.

Over the next two years, Berlin will prepare for new EU pollutant limits, expand data modelling on the impact of potential traffic measures, and strengthen public participation in air quality and mobility planning.

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COPENHAGEN, DENMARK

Copenhagen is committed to achieving air quality that meets World Health Organization (WHO) air quality guidelines. Monitoring at the three municipal stations shows significant reductions in levels of nitrogen dioxide (NO_2), $PM_{2.5}$, PM_{10} and black carbon, although trends in ultrafine particles are less conclusive. According to FORCE Technology, which runs the municipal monitoring stations, continued declines in NO_2 and $PM_{2.5}$ are expected to meet WHO air quality guidelines levels by 2030.

In 2024, the city launched a four-day air quality forecast system that provides hourly levels. Building on this, the municipality health administration has developed an app for vulnerable residents, providing warnings when pollution levels are expected to be high, so they can take necessary precautions.

A ban on old wood burning stoves in areas with district heating was passed in October 2024, and fully implemented in October 2025.

The city also tightened its Low Emission Zone (LEZ) to include passenger cars in October 2023, reducing the exhaust particle emissions by 37%. The city is working on selecting a Zero Emission Zone (ZEZ), expected to be implemented in 2027.

Copenhagen continues to advance vehicle electrification. The city bus fleet now consists of 228 electric buses, out of a total of 357 buses, representing more than 63% of the total fleet. The city also operates 2,850 EV charging points, with plans to expand to 9,500 by 2031, supporting a full transition to zero-emission mobility.

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HEIDELBERG, GERMANY

The Heidelberg low emission zone was lifted by the Karlsruhe Regional Council on March 1, 2023, following an update to the Clean Air Plan for the Karlsruhe administrative district. The zone had originally been introduced after Heidelberg exceeded the EU nitrogen dioxide (NO_2) limit of 40 micrograms per cubic meter ($\mu g/m^3$). Its implementation led to a sustained improvement in air quality, with concentrations remaining well below the limit since 2017. At the Mittermaierstraße monitoring site, NO_2 levels were 27 $\mu g/m^3$ in 2021, and 14 $\mu g/m^3$ at the Berliner Straße automatic station in 2022. Following the zone's removal, pollutant limits have continued to be met.

Heidelberg continues to pursue emissions reductions through its sustainable mobility funding programme, which supports active travel infrastructure and the expansion of private electric vehicle use. The city's climate neutrality strategy, adopted in July 2020, commits to reaching for climate neutrality by 2040 at the latest. Under the climate mobility plan, this translates to a 77.5% reduction in carbon dioxide (CO_2) emissions by 2035 compared to 2010 levels.

The plan reimagines Heidelberg's road network to improve liveability, safety, and urban design by concentrating vehicle traffic on main routes and reallocating space for traffic-calming and street redesign projects.

Already, around 40% of Heidelberg residents use bicycles for daily travel, and for distances between one and five kilometres, bicycles are the primary means of transport. The Cycling Strategy 2030 aims to further strengthen cycling and shift trips away from private car use toward bicycles.

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LISBON, PORTUGAL

Over the past two decades, air quality in Lisbon has improved significantly, driven by stronger environmental policies, cleaner technologies and changing mobility and consumption patterns. Since 2001, concentrations of key pollutants, especially particulate matter ($PM_{2.5}$ and PM_{10}) and nitrogen oxides (NO_x), which are the main causes of negative public health impacts in urban areas, have declined. The 2023 report by the Lisbon and Tagus Valley Regional Coordination and Development Commission (CCDR LVT) confirms this overall progress though areas with intense traffic, such as the city centre of Lisbon, still present challenges.

Nitrogen dioxide (NO_2), closely linked to vehicle emissions, continues its long-term downward trend. However, following sharp reductions during the pandemic, concentrations slightly increased in 2023, as economic activity and tourism rebounded. While hourly NO_2 levels remained within legal limits (200 µg/m³), the annual average once again exceeded the EU limit value (40 µg/m³) at Avenida da Liberdade station, indicating persistent exposure risks in dense traffic corridors.

Ozone (O_3) levels have stayed below annual target values since 2019, but five high-ozone episodes occurred in 2023 during summer heatwaves, resulting in 21 exceedances of the information threshold at eleven monitoring stations. Despite compliance with legal limits, all stations in the network recorded O_3 concentrations above the World Health Organization (WHO) air quality guidelines values, showing that health risks remain at certain times of year.

For $PM_{2.5}$ and PM_{10}, air quality has continued to improve. In 2023, there were no breaches of PM_{10} limits, even before adjusting for natural events such as Saharan dust or forest fires, and $PM_{2.5}$ averages remained well below the 25 µg/m³ limit. These reductions stem from cleaner vehicle fleets, improved industrial practices, and lower reliance on fossil fuels.

Other pollutants, including carbon monoxide (CO), sulphur dioxide (SO_2) and benzene (C_6H_6), remained far below the legal limits and are no longer a major concern, reflecting the transition away from heavy fuel oils, and polluting urban industries.

Overall, Lisbon has benefitted from a sustained improvement in air quality. However, NO_2 and O_3 remain challenging in areas with high traffic density. To meet new WHO and EU standards, the city aims to strengthen emission control policies, promote sustainable mobility, and align urban planning with low-emission and climate goals.

The main source of NO_x and particulate emissions in Lisbon continues to be road transport, especially diesel vehicles. Future measures will involve progressively restricting vehicle traffic in urban centres, actively promoting cycling, walking and electrified public transport, and renewing the vehicle fleet with zero-emission technologies and implementing and expanding low-emission zones (LEZs).

Beyond transport, Lisbon is addressing residential emissions and energy efficiency, as domestic heating contributes to particulate pollution, particularly in households experiencing energy poverty. The city is promoting energy retrofits of homes, renewable energy communities, and cleaner heating systems to ensure lasting improvements in air quality and public health.

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LONDON, UNITED KINGDOM

Since the launch of the Ultra Low Emissions Zone (ULEZ) in 2019, London has seen measurable improvements in its air quality, with levels of toxic nitrogen dioxide (NO_2) 54% lower in central London, 29% lower in inner London, and 24% lower in outer London than they would have been without the scheme. The Mayor of London has provided financial assistance of over £200 million through a scrappage scheme to help Londoners to switch to cleaner vehicles, approving 54,000 applications until its closure in September 2024. A full evaluation report of the scrappage scheme will be published in 2025.

A record 2,000 zero-emission buses are now on the roads, with an ambition for a fully zero-emission bus fleet by 2030. Over 60 per cent of London's taxi fleet are now Zero Emission Capable (ZEC).

The Mayor of London has committed to doubling the amount of EV charging points installed in the city since 2016 to more than 40,000 by 2030, and has supported the delivery of more than 23,000 electric vehicle charge points, over 30% of the UK's total. To improve residents' access to safe and healthy public spaces and active travel, London's cycle network has more than quadrupled in size from 90km in 2016 to 410km, and there are around 600 School Streets in place across London.

The Mayor of London has also launched The School Air Filters Programme, which will provide indoor air quality filters to more than 200 schools, alongside school engagement, educational materials and monitoring and evaluation of the scheme to inform further rollout of filters.

The London-wide ULEZ One Year Report was published in March 2025. It confirmed the scheme has been highly effective at reducing the proportion and number of older, more polluting vehicles, and improved air quality in the expanded ULEZ area.

In 2024, $PM_{2.5}$ exhaust emissions from cars and vans are estimated to be 31% lower in Outer London, and NO_x emissions 14% lower.

Roadside NO_2 concentrations in outer London were up to 4.8% lower in the first year than would have been expected without the London-wide ULEZ expansion, showing tangible benefits of cleaner transport for residents.

Mayor Sadiq Khan has called on leaders of other global cities around the world to follow London's example and make changes to improve air quality for the benefit of people's health and the environment.

To support local initiatives, the Mayor's Air Quality Fund (MAQF) allocated over £5 million to 17 projects between 2024 and 2027, addressing pollution awareness, vulnerable groups' exposure, car dependency, and access to green spaces.

As first communicated in September 2015, the emission standards for non-road mobile machinery (NRMM) changed on 1st January 2025. NRMM across the whole of Greater London are now required to meet EU Stage IV, as a minimum, with a zero emission requirement by 2040.

The Mayor is committed to meeting the interim World Health Organization (WHO) air quality guidelines target of 10 $\mu g/m^3$ for $PM_{2.5}$ by 2030, and the final air quality guidelines as soon as possible. London is modelling interventions to identify the most effective pathways to meet these targets, following a comprehensive engagement process in 2024.

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MADRID, SPAIN

Air quality in Madrid continues to improve for all pollutants except tropospheric ozone. Since 2022, the city has been meeting the limits set by legislation for nitrogen dioxide (NO_2) and is now well positioned to address the stricter thresholds set by the EU Air Quality Directive 2024/2881.

Implementation of the Madrid 360 Sustainability Strategy progressed further in 2024. Under the Cambia M360 Plan, €19.7 million (US$22.9 million) was allocated to support the renewal of private vehicles, taxis, heating and air conditioning systems, urban freight distribution vehicles, electric charging infrastructure, and micromobility initiatives.

The city has rapidly expanded its EV charging network, increasing the number of publicly accessible high-power charging points from 16 in 2019 to 149 by the end of 2024, with targets of 290 by the end of 2025 and 324 by 2026. The municipal transport operator EMT operates 305 charging points, expected to reach 420 by the end of 2025.

Madrid also continues to invest in sustainable mobility. The city now has 1,156km of bike lanes, of which 759km are segregated. BiciMad, the public bike-sharing system, is expanding to all 21 of the city's districts, and is made up of 7,500 bicycles and 611 stations. In 2024, the service was expanded by 19 more stations in six districts.

Public transport electrification is also advancing steadily – 17.9% of the EMT fleet is now electric, with targets of 25% by the end of 2025, 30% by 2026, and 35% by 2027. The EMT operates 35 fully electric lines out of 229, and 19 new lines have been created starting in 2020, including two free lines. A total of 222.5km of lanes are reserved for buses, a 70% increase since 2019.

Since January 2024, vehicles not registered in Madrid have been restricted from driving anywhere within the municipality. The city has also expanded its Regulated Parking Service (SER) to 15 neighbourhoods in five districts, adding over 36,600 spaces – 34,467 for residents (green) and 2,197 for visitors (blue).

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MILAN, ITALY

Milan's Air Quality and Climate Plan, approved in 2022, integrates mitigation, adaptation, and air quality goals. The plan targets compliance with EU air pollution limits for nitrogen oxides (NO_x) and particulate matter (PM_{10}); a 45% CO_2 reduction by 2030; limiting local temperature increases to within 2°C by 2050, through urban cooling and heat island mitigation; and becoming a carbon neutral city by 2050. A dedicated monitoring programme tracks implementation and outcomes for 2022–2023, using advanced air quality sensors and reference stations to assess local exposure and guide interventions near sensitive sites such as schools and hospitals.

The city has introduced five new monitoring stations measuring particulate matter ($PM_{2.5}$ and PM_{10}), nitrogen dioxide (NO_2), nitric oxide (NO), ozone (O_3), carbon monoxide (CO), carbon dioxide (CO_2), black carbon (BC), and volatile organic compounds (VOCs).

Milan continues to cut emissions from transport. Since the Area C congestion charge was introduced in 2012, daily vehicle entries have fallen by 45%; the fee increased in 2023, and Euro 3 petrol vehicles were banned in 2024. In Area B, the Low Emission Zone (LEZ) launched in 2019 has reduced diesel entries by 25%, with most now Euro 5 or 6. In 2025, a new limited traffic zone (ZTL) in the Fashion District banned all vehicles except residents and deliveries in limited time slots. New safety rules in Area B also require blind spot detection systems for heavy vehicles to protect pedestrians and cyclists.

Milan is advancing zero emission freight through actions including a cargo bike pilot under C40's Zero Emission Freight Programme. Milan tested cargo bike deliveries for packages up to 5 kg. This led to a multi-stakeholder consultation process to assess cycle logistics as a scalable solution, supported by a network of urban hubs. The Urban Logistics Roundtable is another initiative led by the city to reduce congestion, pollution and safety risks while addressing business needs.

Milan's electric mobility transition is accelerating. Public transport operator ATM aims to electrify all 1,200 buses by 2031; 280 electric buses are already in service, and over 70% of ATM operations now use electric traction, including buses, trams, trolleybuses, and the metro. Private EV adoption is rising, supported by free access to Area C and free parking incentives. Shared mobility is also accelerating the transition: as of March 2025, Milan has over 3,200 shared cars (36% fully electric), 12,600 shared bikes (66% electric), 1,900 electric scooters, and 6,000 electric kick scooters. The city aims for full electrification of all shared fleets and a broader shift to cleaner vehicles through ongoing fleet renewal. A total of 4,853 taxi licenses were active within Milan, of which 840 were internal combustion engine vehicles, 3,904 (80%) were hybrid, and 109 were fully electric. Milan is rapidly expanding its charging infrastructure. Between 2022 and 2024, the number of charging points more than doubled, from 562 to 1,165, supported by the City Plug project to install 4,000 curb-side chargers across 285 sites within two years.

Active travel is also a priority for the city. Milan's cycling network reached 332km in 2024 (36% protected), a 45% increase over five years, alongside the €450 million (US$522 million) Cambio project to build a 750km metropolitan cycling network and achieve a 20% cycling mode share. In 2024, Milan began constructing six secure bike stations at intermodal hubs, offering nearly 1,000 bike parking spaces with modern features like surveillance and automated access, supporting daily bike use and multimodal travel. Milan is investing in school-focused projects, including a 6km safe cycling route serving 40 schools. The Cento Strade 30 initiative has introduced 30 km/h speed zones and traffic-calming measures around 100 school streets to improve child safety.

Through participatory projects like Möves, Milano Futura Ora and Shared Streets Academy, the city engages residents, associations and stakeholders to shape mobility policies and improving road safety. The Open Squares programme has reclaimed underused urban areas, turning them into vibrant pedestrian-friendly spaces. As of mid-2025, 57 squares have been transformed, and 25 new School Streets have been implemented to enhance neighbourhood liveability.

Looking ahead, Milan will continue tightening vehicle restrictions in Areas B and C, with diesel bans by 2030, expand air quality monitoring and citizen science validation, and develop advanced modelling systems to guide future policies and public reporting.

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OSLO, NORWAY

Air quality in Oslo continues to improve, particularly for nitrogen dioxide (NO_2), due to measures reducing emissions from road transport and the rapid uptake of electric vehicles. Concentrations now comply with European Union (EU) limit values, though the annual mean remains above the revised World Health Organization (WHO) air quality guidelines.

Particulate matter (PM) levels have remained relatively stable. Concentrations of PM_{10} still exceed Norwegian limit values at heavily trafficked areas, including Ring 3 Økern, where levels are also above EU limits. This site is both in a heavily trafficked area and an area with tunnel portals. Overall, PM levels remain above the revised WHO air quality guidelines.

In 2024, the city refined its monitoring network by relocating one station and establishing a new one at Langkaia. This new site was specifically set up to monitor air quality in proximity to areas where multiple wood-burning saunas are in use.

Oslo continues to expand its cycling infrastructure, adding 210km of new routes since 2016. Cycling volumes increased by 63% in 2024 compared with 2014. Ongoing traffic safety measures such as reduced speed limits, safer intersections, speed humps and designated 'heart zones' around schools have further improved conditions for pedestrians and cyclists.

The shift to electric mobility is accelerating in Oslo. As of June 2024, 43% of personal vehicles in Oslo are electric, and 93% of new vehicles sold in May 2025 were zero-emission. Today, 22% of cargo vans in Oslo are electric, while electric and biogas trucks represent 16% of the heavy vehicle fleet. Incentives remain in place, including reduced tolls and parking fees for zero-emission vehicles. Zero-emission trucks and cargo vans are exempt from toll payments until 2030. The city has installed more than 2,500 public chargers and the municipality is developing a new charging infrastructure strategy. Existing measures that support cleaner air include increased traffic tolls (introduced in 2022) and the removal of parking spaces.

A new air quality action plan is in development for adoption in 2025, which will prioritise reducing PM. Further action like expanded dust control, street cleaning, and other local interventions will be need to meet both EU and WHO air quality guidelines.

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PARIS, FRANCE

Paris continues to record steady improvements in air quality, with average nitrogen dioxide (NO_2) levels down 45% and fine particulate matter ($PM_{2.5}$) down 35% over the past decade. These results reflect long-term efforts to reduce road traffic and promote cleaner vehicles. The city is now aligning its actions with the new European air quality directive and aims to meet World Health Organization (WHO) air quality guidelines by 2035.

Key measures include an ambitious Low Emission Zone (LEZ) across Greater Paris, extended in January 2025 to restrict older vehicles (Crit'Air 3 and below). Since November 2024, a Limited Traffic Zone (ZTL) has operated in central Paris, prohibiting through traffic and prioritising local access.

Additionally, the 'children-s streets' programme continues to expand, yielding significant results. As of August 2024, 218 streets have been calmed, representing approximately half of all nurseries and elementary schools, with 70 of these streets featuring landscaping with greenery. The objective for the current term of office by 2026 is to achieve 300 calmed streets, 100 of which will include landscaping.

The city of Paris is also taking measures to address the social and environmental inequalities along the ring road, which is close to the homes of more than half a million residents. Those living within a 500 metre strip either side of the ring road are low-income households. In Paris, the risk of dying from air pollution is five times higher for people on low incomes than for the rest of the population. There is a 30% higher rate of asthma among children living near major roads.

The city has reduced speed from 70 to 50km/h in October 2024, with publicly available monitoring of the impact of the measure through air, noise and traffic indicators. Long term studies have also been launched to follow the evolution of these three parameters during the four years following implementation. In March 2025 Paris also introduced a lane reserved for vehicles carrying at least two people on weekdays during rush hours, to encourage car sharing. The City of Paris has also accelerated the planting of vegetation on the edges of the Ring road and the central reservation, which will continue until 2030.

Paris continues to promote cleaner, safer streets through the Paris prend l'air! awareness campaign, featuring workshops on air quality and the effects of air pollution for schoolchildren and residents. – particularly those most affected by pollution. The new cycling plan for a 100% bikeable city will continue into 2026, aiming to add a total of 450km cycle lanes and 130,000 new bike parking places.

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ROTTERDAM, THE NETHERLANDS

Rotterdam is preparing a new Air Quality Programme, to be adopted in late 2025, outlining measures to meet the new EU air quality standards for nitrogen dioxide (NO_2) and particulate matter (PM_{10}). Final decisions on implementation will follow the 2026 municipal elections, with continuous monitoring to ensure compliance.

Rotterdam aims for an emission-free urban mobility system by 2040, as outlined in its Climate Action Plan. Efforts are focused on promoting clean and active transport like walking and cycling, enhancing public transport (including Park and Ride schemes), and expanding shared electric mobility. The city is implementing a new Traffic Circulation Plan that prioritises active mobility and reduces car speeds to 30 km/h. Remaining motorised traffic will be addressed through the Approach on Zero Emissions Mobility.

Key initiatives include the introduction of a zero-emission zone for vans and trucks on January 1, 2025, with a transitional period until 2030. Agreements with car-sharing providers have resulted in over 50% of shared cars being emission-free. In collaboration with the Rotterdam The Hague Metropolitan Region (MRDH), approximately 40% of public bus kilometres are now emission-free. Similarly, about 50% of transport for special social target groups is emission-free, and agreements with the Rotterdam taxi industry, supported by subsidies, have led to approximately 12% of taxis being emission-free. Furthermore, about 40% of water taxis are emission-free.

More than 150 major Rotterdam employers, collectively employing over 150,000 people, have joined the Sustainable Mobility Climate Alliance, pledging to halve CO_2 emissions from business and commuting travel through increased cycling and walking, and greater use of emission-free vehicles, alongside employee mobility packages. All passenger cars in the municipal fleet have been electric since 2023 (with a few hybrids as exceptions), and the municipality has adjusted travel expense schemes to encourage bicycle and public transport use among employees.

Rotterdam is also rapidly expanding its slow, fast, and heavy-duty charging network, with over 7,200 public charging points by the end of 2024, ensuring all residents are within 200 meters of a public charging station.

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STOCKHOLM, SWEDEN

Stockholm planned to introduce a clean air zone (a near-zero emission zone) in its downtown business district, covering roughly 1 square kilometre on 31 December 2024. However, implementation was put on hold until legal aspects were resolved. After eight months of deliberation, the regional authorities decided on 27 May 2025 not to approve the clean air zone. The city of Stockholm will continue working on finding a way forward for the zone.

Air quality and noise measurements within the proposed zone continue to be collected using both passive samplers and continuous monitoring instruments through at least the end of 2025. Early results of the concentrations of nitrogen dioxide (NO_2) concentrations indicate that one narrow street canyon records higher levels than any other location in Stockholm, confirming that the city identified the right area for the Clean Air Zone. These findings will likely support the city's next steps towards a Clean Air Zone.

Electrification of Stockholm's vehicle fleet continues to advance even without the zone's implementation. Data from automatic number plate recognition cameras (ANPR) shows a higher proportion of 'clean' vehicles operate on weekdays compared to weekends. Passenger cars are electrified to a larger extent than light- and heavy-duty vehicles. More analysis on this data will be completed in 2025.

During the summer of 2024, the Stockholm traffic department closed traffic from Sveavägen, a major street in Stockholm inner city, transforming it into a lively city park with food and recreational activities during four separate weekends between July and August. In 2025, Sveavägen will be closed for traffic on six occasions for three days instead of two. Two other 'summer streets' will be permanently pedestrianised from January 2025.

Air quality levels of NO_2 and PM_{10}, as well as noise continue to be monitored continuously, both inside and outside the proposed Clean Air Zone, providing valuable data to support future decisions on urban air quality and mobility management.

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TEL AVIV-YAFO, ISRAEL

Transportation is the primary source of air pollution in Tel Aviv-Yafo. In 2024, air pollution levels improved, with $PM_{2.5}$ levels decreasing by 18.3% and nitrogen dioxide (NO_2) levels decreasing by 6.8% compared to 2023. Tel Aviv–Yafo is committed to continually improving the city's air quality for the benefit of all its residents and visitors.

As the city undergoes rapid urban regeneration, air pollution from construction and demolition sites has recently increased. Another source of pollution, the Reading natural gas power plant, stopped operating in 2022, and in February 2024, an official decision was made to shut it down permanently. The city operates 15 monitoring stations measuring nitrogen dioxide (NO_2), fine particulate matter ($PM_{2.5}$), sulphur dioxide (SO_2), ozone (O_3), benzene (C_6H_6), and carbon monoxide (CO). One monitoring station was added by the city municipality in August 2024 and was placed in proximity to the central bus station, measuring NO_2, nitrogen oxides (NO_X) and $PM_{2.5}$ concentrations. In addition, the city has expanded its air quality monitoring network by adding 50 low-cost air quality sensors that measure $PM_{2.5}$ and NO_2 concentration, as well as temperature and relative humidity. The sensors were placed evenly throughout the city, in order to gather information from all parts of the city – equally. The data gathered from the sensors is being reviewed and its quality and reliability are being inspected. Analysis shows a general trend of improvement in air quality in the city over the past decade.

Key measures include advancing the Clean Air City Plan, which restricts the most polluting diesel vehicles through digital enforcement. An action plan targeting the central bus station—previously one of the city's most polluted areas—has achieved major improvements, leading the Ministry of Environmental Protection to reclassify the area in 2025 .

Tel Aviv-Yafo took several measures to improve air quality in the area around the city's central bus station in 2024 and 2025 - which includes two neighbourhoods with some of the most severe socioeconomic disadvantages in the city. This resulted in the Ministry of Environmental Protection declaring the central bus station area as no longer severely air-polluted.

Mobility policies are shifting toward sustainability. Revised parking standards from January 2025 limit each household to two permits, with higher fees for the second. The Red Line of the light rail now carries over 100,000 daily passengers, while the Green and Purple Lines are under construction. Cycling is also expanding, with 183 km of bike lanes already completed toward a 250 km network by 2030. It is estimated that 115,000 rides are made per day in the city, half of them by electrical bicycle. The city provides bicycles for public rental use which according to estimates are being used 6,000 times in a month. Additionally, the city offers 5,400 E-scooters for public rental use, strategically placed throughout the city. Eight additional streets became pedestrian-only in 2024, bringing the total to 25.


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WARSAW, POLAND

Warsaw's long-term air quality efforts have led to substantial progress. character when it comes to air quality. In the last seven years, particulate matter (PM_{10} and $PM_{2.5}$) pollution has decreased over 30%, and benzo[a]pyrene (BaP) by over 70%. Between 2022 and 2024, $PM_{2.5}$ concentrations at all stations were consistent with the standard (20 µg/m³). The average annual concentrations of PM_{10} at all stations also did not exceed 40 µg/m³. For the first time, BaP concentrations at all monitoring sites were within the standard in both 2023 and 2024.

A key measure has been the elimination of old, smoke-belching stoves. From 2017 to early 2025, Warsaw decreased their number from around 15,000 to just 1,508, by providing support in the form of nearly full-cost subsidies worth about PLN 91 million (US$24.8 million) for replacing over 4,000 stoves and 295 oil-heating systems. In municipal buildings, only 86 such stoves remain from an original 2,095, with almost 50 million PLN allocated from the "smog fund" for their replacement. As of January 2025, subsidies no longer support stove removals (now banned since 2024) but can fund the replacement of inefficient gas heating. The city also employs seven energy advisors who provide community meetings, home visits, and energy consultations, having delivered 178 advisories and verified over 50 audits so far.

The city is also improving Information, cooperation and control. The city employs seven energy advisors as of 2025. The City of Warsaw regularly informs residents about air quality levels based on data from reference stations and the supporting network of air quality sensors. The City Guard conducted over 30,000 anti-smog inspections between 2021 and 2024.

In 2024, nitrogen dioxide (NO_2) concentrations stayed within the EU limit (40 µg/m³), though further action is needed to meet stricter upcoming standards, especially from traffic emissions – with over two million cars registered in the city.

To reduce road pollution, Warsaw is investing heavily in low- and zero-emission transport. In 2024, more than 956 million passengers used public transport, supported by PLN 3.8 billion (US$1 billion) in municipal funding. The electric bus fleet will exceed 200 units in 2025, and nearly 40% of vehicles are already low- or zero-emission. The city continues to expand tram and metro lines, improve pedestrian routes, and extend its 814 km cycling network. Seventeen Park and Ride facilities help limit car traffic into the centre.

Poland's first Low Emission Zone (LEZ) began operating in Warsaw on 1 July 2024, with C40 providing analytical and technical support. Its phased rollout has already influenced vehicle purchasing decisions — the share of newly registered diesel cars failing to meet Euro 6 standards dropped to 8% in 2024.

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SIGNATORY CITIES IN

LATIN AMERICA

BOGOTÁ, COLOMBIA

Bogotá continues to make strong progress toward cleaner air through its Plan Aire 2030, which targets average annual concentrations of PM_{10} at 30 µg/m³ and $PM_{2.5}$ at 15 µg/m³ by 2030, in line with World Health Organization (WHO) air quality guidelines.

The Bogotá Air Quality Monitoring Network, operated by the District Secretariat of the Environment, received renewed accreditation in June 2023 to officially measure six key pollutants: particulate matter (PM_{10} and $PM_{2.5}$), ozone (O_3), nitrogen dioxide (NO_2), sulphur dioxide (SO_2), and carbon monoxide (CO). Nineteen monitoring stations operate continuously, complemented by eight black carbon monitors. Bogotá has also expanded its network of low-cost microsensors, growing from 17 in 2023 to 48 in 2024 and with a goal of 70 by the end of 2025. All Bogotá's air quality reports are publicly available on the city's website. The network supports data transparency, citizen science, and targeted interventions such as the Urban Zones for Better Air (ZUMAs).

The first such zone, ZUMA Bosa-Apogeo, was implemented under Decree 492 of 2023, coordinating 39 actions to reduce emissions. These areas are designed to transition from Emission Reduction Zones to Low Emission Zones, focusing on transport, industry, and public awareness.

Under the city's 'Bogotá Walks Safely' (Bogotá Camina Segura) District Development Plan 2024–27, Bogotá aims to reduce $PM_{2.5}$ and PM_{10} concentrations by 8% (from 2023 levels). This will be achieved by implementing two new clean air zones (ZUMAs), improved monitoring, and the creation of FONCARGA, a fund to renew freight vehicles. FONCARGA will begin operation in July 2025, supporting the replacement of 195 cargo vehicles by 2027, with long-term goals of 394 replacements by 2031 and 596 by 2035.

Bogotá hosted the third annual Fair on Sustainable Mobility and Technologies for Freight Transportation in September 2024 showcasing collaboration between the city and the private sector to promote zero- or low-emission freight transport technologies. This is one of the many initiatives the city has introduced under the Strategic Plan for the Comprehensive Management of Air Quality in Bogotá (Plan Aire 2030).

The city is also advancing sustainable mobility. Bogotá now has 661 km of cycling infrastructure, 70% of which are protected lanes, and 27 public transport stations with over 8,000 bike parking spaces, supporting nearly 900,000 daily bike trips.

Bogotá's public transport system operates 1,486 electric buses, more than 14% of its 10,514-vehicle fleet – one of the largest electric bus fleets outside China. Plans are underway to add 613 zero- or low-emission vehicles by 2027, including 269 articulated and bi-articulated electric buses in the next phase.

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BUENOS AIRES, ARGENTINA

The City of Buenos Aires is committed to improving air quality and achieving pollutant levels within the World Health Organization (WHO) air quality guidelines by 2050.

To achieve this objective, Buenos Aires is introducing measures to modernise its air quality monitoring network, to enable more efficient and reliable detection of pollution levels. The city is also implementing and improving emissions inventories, from fixed and mobile sources, which will facilitate future urban pollution modelling and enable effective policymaking.

Buenos Aires is also making progress in the gradual reduction of pollutants in line with WHO air quality guidelines. Key measures include traffic reorganisation projects, including Metrobús corridors and the Paseo del Bajo. Smart urban logistics are also being implemented through 'blue boxes' to optimise freight distribution. Buenos Aires is improving public transportation aim to expand the range of more accessible, faster, and less polluting modes. The city is promoting active mobility by expanding bike paths and improving pedestrian spaces, with the goal of reclaiming public space for meeting and socialising. Interdepartmental work among various city government departments responsible for environmental matters has been strengthened to coordinate efforts and maximise impact.

Buenos Aires is committed to ensuring the city's sustainability, protecting the health of its residents, and moving toward a cleaner, more resilient city that is prepared for the challenges of the future.

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MEXICO CITY, MEXICO

In December 2021, Mexico City, in coordination with the governments of the State of Mexico and Hidalgo, published an air quality management programme to improve air quality in the Metropolitan Area of the Valley of Mexico (ProAire ZMVM) 2021–30.

Between 2021 and 2024, progress was made on the 16 measures applicable to Mexico City, resulting in several successful initiatives. These include the acquisition of Metrobús (BRT) units with electric and low-emission (Euro 6) technologies, along with the expansion of new routes.

Passenger Transport Network units were also replaced with low-emission (Euro 6) technologies. The first section of Line 1 of the Mass Transit System-Metro was modernised, and maintenance began on the second section, and one line was expanded. The light rail system was renovated with new units, and the entire Trolleybus System (STE) was renovated, adding two new trolleybus lines. Three cable car lines were created, improving access to sustainable transportation for lower-income communities.

Two self-regulation programmes for freight transportation were introduced – one to encourage the use of particle filters and another to promote electromobility. A support programme for the acquisition of electric taxis was also established.

Significant reforestation efforts have taken place across the city, with more than 38,000 hectares of conservation land and 2,000 hectares of urban forests and environmentally valuable areas reforested, with over 51 million trees and plants planted.

The ECOBICI public bike-sharing system was completely renovated, leading to a 55% increase in bicycle trips between 2020 and 2024. In 2024, Mexico published two key national standards limiting carbon dioxide (CO_2) emissions from new cars, and raising awareness of air quality levels and health risks.

Mexico City also launched The Flag Pilot Programme, training elementary school communities including students, teaching staff, administrators, and parents, on the negative health impacts of air pollutants. Each school community receives daily air quality forecasts for their area and displays coloured flags indicating current and forecasted air quality conditions. As part of the programme, 1,200 people from the education sector were trained.

Annual social media campaigns continue to raise public awareness, encouraging residents to reduce emissions during the winter and ozone seasons. Air quality infographics are being displayed on screens at the Metrobús, Cablebús, and in some public buildings.

Planned actions for 2025 include completing maintenance on the second section of Metro Line 1, starting works on Line 3, launching a new cable car line, promoting electric mobility in freight transport, and updating the city's air quality programme.

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GUADALAJARA, MEXICO

As Mexico's second largest city, Guadalajara remains committed to climate action and air quality improvement projects initiated in 2018, when the city joined the C40 network.

Since September 2024, the city has advanced the analysis, feasibility studies, and resource mobilisation to implement its first Low Emissions Zone (LEZ) and transition to a Clean Air Zone (ZAL). As part of its Clean Air Accelerator commitments, Guadalajara conducted a diagnostic study of pollutant concentrations at strategic locations within the proposed LEZ to establish a baseline prior to implementation. The results showed that vehicular traffic is the main source of air pollution in the area.

A feasibility analysis for the implementation of the LEZ outlined measures to reduce polluting vehicle traffic, promote walking and cycling, and prioritising urban trees in the area.

Guadalajara has also implemented a tree care strategy that includes the production of native trees in the municipal nursery, technical evaluation and assessment of tree populations with a living-being approach, soil production through a process of collecting and milling forest residue generated in the city, strengthening tree populations in nurseries to improve their survival and adaptation in the city, and the designation of heritage trees.

Guadalajara's 2019 Tree Planting Plan identifies strategic locations in the city to increase forest biomass and thereby mitigate the effects of climate breakdown. Guadalajara has planted just over 12,000 trees in the municipality from September 2024 to May 2025.

Guadalajara will continue to contribute to the Tree Planting Plan's actions in the city and is seeking funding for the implementation and execution of its LEZ. In addition, The city is actively working to deliver projects that support the use of non-motorised mobility across the city.

LIMA, PERU

Although the city of Lima still faces significant challenges that require ongoing and coordinated action between authorities, businesses, and residents, it has made significant progress in implementing policies and projects to improve its air quality.

Lima has developed the 'Ordinance for the Creation of a Clean Air Zone in the Historic Center of Lima', to promote sustainability and protect public health and cultural heritage.

Lima is promoting and expanding sustainable transport. In 2024, the city contributed to the restoration of 53,139.26 m² of roads, introducing street furniture to strengthen road safety and prioritise pedestrians, promoting more sustainable and accessible mobility in Lima's Historic Centre. Additionally, 5.3km of bike lanes were implemented in Lima's Historic Centre. In addition, 850 m² of pedestrian walkways were implemented as part of the international 'Streets for Children' programme to make streets safer, more accessible, resilient, and healthier.

Next steps and planned actions to tackle air pollution over the next two years include completing the Urban Mobility Plan (PMU) for Lima and Callao by the end of 2025. This strategic planning tool will set out a comprehensive urban mobility assessment, vision, objectives, and goals for the next 20 years. It will also consolidate data across all modes of transport, enabling the Urban Transport Authority to implement sustainable urban mobility systems within its jurisdiction.

In addition, the city will develop a Processes and Operations Manual for the Clean Air Zones Programme. This technical tool will strengthen local environmental management and support the effective implementation of measures to improve air quality.

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MEDELLÍN, COLOMBIA

In May 2024, Medellín City council approved the 'Medellín Loves You' Development Plan 2024–27. Within this framework, the Secretariat of the Environment leads the Noise and Atmospheric Emissions Management programme, which aims to implement inter-institutional strategies to equitably mitigate the effects of population growth on the city's air quality and acoustic environment.

While the District has limited authority to directly control atmospheric emissions, the Secretariat plays a strategic role coordinating institutional actions and promoting responsible energy production and consumption habits, integrating environmental planning efforts at local and regional levels.

Key achievements include training approximately 750 public transport drivers in efficient driving techniques between June 2024 and May 2025, and enrolling 185 companies in the Grand Alliance for the Circular Economy. This initiative promotes the integration of air quality improvement strategies, establishing new challenges for reducing polluting emissions and encouraging the adoption of circular economy practices in Medellín and its surrounding areas. More than 60 of these companies have prioritised meeting goals associated with reducing atmospheric and greenhouse gas (GHG) emissions.

These initiatives directly support sustainable mobility, emissions reduction, and climate resilience – advancing the objectives of the Comprehensive Air Quality Management Plan (PIGECA) 2017–30, particularly under Thematic Axis No. 8: "Timely and Effective Response to Air Pollution Episodes" and the Cross-Cutting Axis: "Pedagogy, Education, and Civic Culture."

The actions carried out by the Medellín Secretariat of the Environment reflect a comprehensive and coordinated approach to addressing urban environmental challenges, including air quality and noise pollution. Through strategic partnerships, environmental education, and strengthened technical capacities, the District is moving toward a more sustainable and resilient city. These initiatives reinforce local and regional commitments under PIGECA, and position Medellín as a city committed to climate action and the circular economy, aligned with the global sustainability goals of the C40 network.

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QUITO, ECUADOR

Quito has made significant progress to meet its goal of reducing carbon dioxide (CO_2) and other air pollutant emissions by 30% by 2030.

Quito has prioritised the promotion and expansion of sustainable mobility. The entry into operation of the Quito Metro in December 2023 prevented an estimated 59,000 tCO_2e in 2024. An additional 60 fully electric units to the trolleybus fleet has reduced $PM_{2.5}$ by up to 15% during peak hours at stations such as Santo Domingo and Villaflora. 15km of permanent bike lanes have been introduced in the city and Benalcázar Street has been pedestrianised. Ordinances providing incentives for electric mobility and regulating the use of bike lanes will soon be introduced.

Quito also has also expanded its air quality monitoring network. PM_{10} monitors were introduced in Guamaní and Tumbaco, and mobile monitoring campaigns were conducted to assess the impact of the transition to electric transportation.

The World Health Organization (WHO) air quality guidelines are used as a technical and operational reference to inform residents of air pollution risks. The Quito Air Quality and Health Index (IQCA-Salud), developed in conjunction with NYU and incorporating UNICEF and the Ministry of Health, continues to integrate data on multiple pollutants and population vulnerabilities.

Next steps in Quito's air quality agenda include the approval of tax incentives for zero-emission vehicle fleets and the introduction of 80 new electric buses for exclusive corridors. The city will also strengthen the REMMAQ's electrical backup systems to ensure continuous air quality data during power outages.

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RIO DE JANEIRO, BRAZIL

According to the Sustainable Development and Climate Action Plan (PDS), launched in June 2021, Rio de Janeiro is committed to reducing PM_{10} and $PM_{2.5}$ levels by establishing new air quality targets. The plan aims to reduce PM_{10} concentrations to 30 µg/m³ by 2030 for the city's 6.2 million inhabitants (as of 2022), spread across an area of 1,200 km2, divided into five planning areas (AP).

Data from the air quality monitoring network of the Municipal Secretariat of Environment and Climate (SMAC), which operates eight automatic fixed reference stations, indicates that average PM_{10} concentrations are below the national standard of 40 µg/m³, but above the city's PDS target of 30 µg/m³.

For $PM_{2.5}$ – an important air pollutant without a PDS target – there has been an upward trend, with 2024 annual charges exceeding national standards.

City efforts are focused on reversing this trend. In 2025, Rio de Janeiro has advanced their efforts to expand its air quality monitoring network, 31 low-cost sensors are planned to be installed to measure PM_{10} and $PM_{2.5}$, in addition to other air quality indicators. Once completed, the network will include eight reference stations and 33 low-cost sensors. This expansion aims to improve spatial coverage and ensure more equitable data collection, particularly in vulnerable and historically marginalized communities such as Complexo do Alemão.

Based on its commitment to cleaner air, the city is developing several high-impact initiatives targeting major sources of emissions. These include expanding air quality monitoring, implementing a Low Emission Zone (LEZ), creating a public air quality monitoring platform, and advancing electrification of the public transport fleet.

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SALVADOR, BRAZIL

The city of Salvador is committed to improving its air quality. Since 2015, air pollution levels have improved, with $PM_{2.5}$ levels reduced by 2.3% and nitrogen dioxide (NO_2) levels reduced by 4.2%. These improvements stem from targeted efforts to address major sources of emissions throughout the city. As a result, improvements in public health – such as fewer respiratory illnesses, asthma cases, or hospital visits related to air pollution – are estimated to have saved over US$ 5.5 million in avoided deaths and hospitalisations.

Since September 2024, Salvador has expanded its air quality monitoring network, installing 20 new sensors to replace the previous 10 previously installed. The network now provides coverage across all districts, including areas of socio-environmental vulnerability such as the communities of Ilha de Maré, Subúrbio Ferroviário, and Ilha dos Frades. Site selection prioritised equity to ensure comprehensive and representative data collection.

Building on its clean air commitment, the city has advanced several high-impact initiatives to reduce emissions since September 2024.

Key measures include a fleet renewal programme, the expansion of BRT routes with electric units, and extensive urban afforestation programmes – all aimed at curbing emissions from the transport sector, which accounts for 74% of Salvador's greenhouse gases.

To further control pollution sources, Salvador passed a law to establish a sustainable building certification programme, another law encouraging the use of photovoltaic solar energy in new buildings to reduce emissions under municipal authority, and another establishing sustainable administrative measures within the Municipal Public Administration, to gradually replace fossil fuels with ethanol in municipal operations. The city also added 35 electric trucks to its fleet. An interdepartmental team was created to integrate and institutionalise air quality actions across key city departments, including the Salvador Secretariat of Sustainability, Resilience, and Animal Protection and the Municipal Health Department, among other collaborators.

Main advances to tackle transportation emissions include efforts to improve active travel. The city built 350km of new bike lanes, increasing total cycling infrastructure by over 90%, leading to an increase in bicycle trips. This was complemented by the introduction of eight electric buses, with plans to procure 100 more, along with the expansion of the city's electric charging infrastructure. In addition, new legislation supports the phase-out of fossil fuels for cooking and heating in residential and commercial buildings.

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SIGNATORY CITIES IN

NORTH AMERICA

AUSTIN, UNITED STATES

Overall, Austin's air quality in 2024 improved compared to 2023. The number of days with high ozone levels and high particulate matter (PM) levels decreased, although some PM events were more severe in 2024.

Central Texas typically records between five to ten days per year when air is either "unhealthy for sensitive groups" or "unhealthy" due to ozone. In 2023, there was a spike to 17 days, and in 2024, the number reduced to 10. Preliminary data indicate regional fine particulate matter ($PM_{2.5}$) levels averaged 9.3 µg/m^3 – slightly above the new US Environmental Protection Agency (EPA) standard of 9 µg/m^3. This puts Austin at risk of being designated out of attainment in the future.

In 2024, air quality in Central Texas was classified as 'good' on 210 days, 'moderate' on 136 days, and 'unhealthy' for sensitive groups on 18 days. To improve data coverage, the City of Austin expanded its monitoring network with new particulate matter sensors, including a new monitor at the Austin Central Library. Real-time data from these sensors are publicly available on the PurpleAir platform.

Austin's Air Quality Program is working closely with the Capital Area Council of Governments to raise awareness about air quality in the region, and remain under the federally-mandated ozone standard of 70 parts per billion (ppb). Regional strategies include promoting sustainable transportation, improving fuel efficiency, and reducing construction-related dust emissions.

The City of Austin's Office of Climate Action and Resilience, working with regional partners, developed the Priority Climate Action Plan (PCAP) for the Austin-Round Rock-Georgetown Metropolitan Statistical Area (MSA). This initiative was part of the EPA's Climate Pollution Reduction Grants (CPRG) program, highlighting significant regional collaborative accomplishments. A central component of the PCAP was analysing six high-impact, implementation-ready GHG reduction measures, with attention to their co-pollutant impacts and air quality benefits. The measures included transportation demand management (TDM) programs, R99 fuel incentives, community solar and battery storage, municipal building retrofits, water conservation, and urban tree planting.

In July 2024, Austin secured US$ 47 million in CPRG Implementation Grant funding to advance the PCAP's TDM Program, focused on reducing vehicle miles traveled (VMT) and enhancing zero-emission mobility options. These activities laid the foundation for the upcoming Comprehensive Climate Action Plan (CCAP), to be released in 2025.

At the local level, Austin City Council passed a new resolution in July 2024, directing the creation of a Comprehensive Climate Implementation Program to accelerate progress toward the city's net-zero goal. The Office of Climate Action and Resilience used C40's Action Selection and Prioritization (ASAP) tool to assess several hundred municipal and community-sourced actions based on equity, health, housing, jobs, and feasibility. The resulting two-year Implementation Plan identifies key projects to reduce emissions and deliver air quality co-benefits – potentially cutting up to 2.3 million tCO_2e by 2040.

To reduce transportation emissions, Austin continues electrifying its public transit fleet. The first zero-emission buses – powered by solar and wind energy – entered service in 2020. Now, a dozen are in operation. Construction began in 2025 on a new electric bus facility in North Austin with capacity for 214 buses (over half the city's fleet) and charging infrastructure for 187 battery-electric units.

HOUSTON, UNITED STATES

In 2025, Houston launched it's EPA-funded Enhanced Air Monitoring Project, beginning with mobile monitoring of ethylene oxide and stationary air monitoring for 1,3-butadiene (C_4H_6), benzene (C_6H_6), and formaldehyde (CH_2O). The air monitoring in this project is focused on high-risk neighbourhoods in the city, which have fenceline communities next to refineries. The monitoring information will provide residents with important air quality knowledge and support regulatory oversight.

Houston has also developed a Summer Surveillance dashboard to track heat-related illness and other health conditions through the summer months, exacerbated by heat, air pollution and pollen, helping assess public health risks during extreme weather.

As part of efforts to improve air quality and promote environmental justice, Houston received Inflation Reduction Act grants to plant approximately 1,100 trees in vulnerable communities in Northeast Houston. Although these grants were later terminated due to federal administrative changes, the City continues tree-planting initiatives in socially and environmentally vulnerable neighborhoods, enhancing climate resilience and air quality where it is most needed.

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LOS ANGELES, UNITED STATES

The City of Los Angeles, and the broader South Coast Air Basin – which includes Los Angeles, Orange, Riverside, and San Bernardino Counties – continue to experience high ozone (smog) and fine particulate matter ($PM_{2.5}$), remaining non-attainment of National Ambient Air Quality Standards. Air pollution in the region is monitored and regulated by the South Coast Air Quality Air Management District (SCAQMD). Reducing emissions in the City of Los Angeles benefits the region as a whole.

The smoke generated from the January 2025 wildfires created significant air pollution and smoke that created unhealthy levels of pollution in the City of Los Angeles for days. As a result, it sparked public interest in air quality monitoring and data. In response to air quality concerns, the Mayor's Office partnered with the Board of Public Works and the Community Investment for Families Department, to distribute over 2,600 air purifiers through the City's FamilySource centres. Additionally, the Emergency Management Department distributed over 20,000 air filters through partnerships with community based organisations.

The city continues targeting major sources of emissions: mobile sources, the Port of Los Angeles, and industrial sources. At the Port of Los Angeles, over 550 zero-emission semi trucks have been added to the Ports Drayage Truck Registry, significantly moving forward the joint Ports' Clean Air Action Plan goal of all trucks serving the Ports being zero emission by 2035. The Port of LA is also moving forward on implementing its work plan for the US$412 million EPA Clean Ports grant, including US$50 million for a community-led zero emissions programme, workforce development, and related engagement activities. Lastly, the Port continues to work on implementation of its Green Shipping Corridor. In August 2024, the first green methanol powered ship coming from Shanghai called at the Port, progressing towards zero-lifecycle carbon shipping on the LA-Shanghai corridor in 2025.

Despite federal rollbacks of environmental regulations and challenges to California's stricter standards, Los Angeles remains committed to advancing emission reduction initiatives and improving regional air quality.

PHOENIX, UNITED STATES

Phoenix continues to working to improve air quality and meet the Environmental Protection Agency (EPA) National Ambient Air Quality Standards. Phoenix does this by working alongside regional partners, residents and businesses. The region is considered in attainment for nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), and lead (Pb). The region is in nonattainment for particulate matter ($PM_{2.5}$ and PM_{10}), and ozone (O_3). The city does not have regulatory authority to set reduction targets, and work closely with Maricopa County Air Quality Department, the regional regulatory authority.

Transportation is the largest source of emissions. Through the Transportation 2050 programme, Phoenix promotes active mobility by implementing the Active Transportation Plan, expanding bike and pedestrian infrastructure, and improving transit access. From 2016–24, the city added 286.7 miles of bike lanes, 99 miles of sidewalks, and 92 HAWK crosswalks. A US$25 million federal grant will fund the Rio Salado Bike and Pedestrian Bridge, connecting South Phoenix to downtown and public transit by 2029. The city also updated the Shade Phoenix Plan in 2024 to address extreme heat risks for walkers and cyclists. In June 2025, the South Central Extension/Downtown Hub opened, adding five miles to the light rail and creating a two-line transit system.

Residential woodburning and firework use are two primary sources of $PM_{2.5}$ pollution in Phoenix. Efforts by Maricopa County's annual 'Burn Cleaner, Burn Better' campaign educates residents on the harmful effects of woodburning. The program offers fireplace retrofit for a target area in South Phoenix where $PM_{2.5}$ concentrations are highest, and provides vouchers for cleaner outdoor firepits. Starting in 2025, a citywide task force between the Police and Fire Departments, as well as the Neighborhood Services and Parks Departments, aims to further reduce fire-related incidents and curb the use of illegal fireworks during the Fourth of July holiday. In 2024, following strong community engagement and coordinated public safety efforts, fireworks-related incidents decreased by 37%. This new joint task force aims to build on 2024's success by enhancing prevention and enforcement efforts.

In December 2024, the City of Phoenix hosted an Innovate Phoenix Challenge Community Hackathon in collaboration with Venture Café. Each Hackathon hosts participants from diverse backgrounds who work in teams to address top city priorities. The teams then pitch their innovative solutions to a panel of judges for a chance to win a cash prize and potentially partner with the City of Phoenix to prototype ideas.

The city has hosted five hackathons focused on topics such as chilled drinking water in public spaces, manufactured shade, and affordable housing solutions. The goal of the December 2024 hackathon was for teams to come up with innovative solutions to improve air quality, specifically particulate matter. A total of 23 participants formed five teams to consider the issues. The pitches on the issues were heard by over one hundred attendees. The winner was chosen by a panel of judges including air quality experts from Arizona State University researchers, a representative from Mom's Clean Air Council and other local stakeholders.

The winning team's solution suggested a collaboration with high schools to monitor air pollution and educate students on how to implement changes to improve local air quality. The City of Phoenix works to implement the winning solution proposed at each Hackathon as a pilot project and determine the feasibility of mainstreaming the project.

WASHINGTON, DC, UNITED STATES

The District of Columbia continues to monitor air pollution in line with the Clean Air Act Mandate. The ambient air monitoring network now includes six stations, with the newest at Bald Eagle Recreation Center (Ward 8) measuring $PM_{2.5}$ and soon ozone (O_3), nitrogen oxides (NO_X), and black carbon.

The Department of Energy and Environment (DOEE) has continued to expand its coverage via its hyperlocal air quality monitoring programme. DOEE has installed nearly 50 PurpleAir sensors at residents' homes, while also preparing to deploy approximately 50 Clarity Nodes throughout the city at schools and on district-owned assets near schools. Harvard's Community Data Health Initiative and the Environmental Defense Fund have assisted DOEE in determining the locations for Clarity Node placement, based on factors such as schools closest to sources of pollution, higher numbers of children with asthma, and other risk factors. Additionally, DOEE is planning to deploy four park bench monitors around the city. The locations of these monitors were chosen by the local Air Quality Advisory Board, using the parameters provided by DOEE and community input. A publicly accessible map will display readings from these sensors to better inform the public of the local air quality. DOEE also contracted private company Aclima to conduct mobile hyperlocal air quality monitoring and testing throughout seven wards.

In April 2025, the EPA confirmed that the District attained the 2015 NAAQS ozone standards, recognising DOEE's demonstration that the 2023 Canadian wildfires were an exceptional event.

In January, the District submitted a recommendation to be designated as in compliance with the EPA's new annual $PM_{2.5}$ NAAQS of 9 µg/m^3. In June, the District submitted another recommendation for a compliance designation with the new sulphur dioxide (SO_2) secondary standard.

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SIGNATORY CITIES IN

SOUTH WEST ASIA

AMMAN, JORDAN

Since joining the Clean Air Accelerator in 2019, Amman has made significant air quality progress with a focus on reducing emissions from transportation, waste management, and urban greenery.

To improve equitable access to public transport and reduce emissions, the city has expanded its Bus Rapid Transit (BRT) system by adding 16 new buses and creating a new route connecting Amman to Zarqa, reducing reliance on private vehicles. In addition, 100% of traffic signals have been upgraded to LED, and the city has implemented a smart traffic system, which has improved traffic flow and cut vehicle emissions by 82.5% in controlled areas. A clean-energy tram initiative was also launched in Hussein Gardens to discourage car use within parks.

In waste management, the city has advanced the Al-Ghabawi Landfill project by including the sixth sanitary cell (176,000 square metres) to reduce methane emissions, and a biogas-to-energy plant is expected to cover 40–45% of municipal electricity needs. Mechanical-Biological Treatment (MBT) facilities have been initiated to process 239 tons of waste per day, producing compost and recyclables. Additionally, the city partnered with USAID to deploy recycling banks and promote waste segregation in commercial areas.

To reduce the impacts of climate change and air pollution, the city has also put significant effort into increasing urban greenery from 1.6% to nearly 2% of the city, with 3.759 m^2 per capita, through projects like King Abdullah II Gardens and Tel Al-Phosphate reforestation. The city also opened new parts like the Princess Salma Park (44,000 square metres) and rehabilitated Al-Mahatta Park, adding more than 3,000 trees to mitigate PM_{10}.

Over the next two years, the city plans to continue its work on transport emissions by introducing 350 electric buses and expanding charging infrastructure. Additionally, waste-to-energy initiatives will focus on scaling biogas projects to achieve 50% landfill diversion by 2026. Public awareness campaigns will also be expanded to target over 10,000 residents with messages against tobacco and waste burning.

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BENGALURU, INDIA

Bengaluru has taken important steps to strengthen its air quality management efforts alongside national programmes such as the National Clean Air Programme and State Action Plan for Clean Air (SAPCA). While implementation of certain measures is ongoing, strategic planning and foundational work have advanced considerably.

The city expanded its Continuous Ambient Air Quality Monitoring Stations (CAAQMS) network to 13 as of late 2023, with a plan to add more by converting 13 manual stations to continuous ones. These efforts aim to improve spatial data resolution and support evidence-based policy design.

Bengaluru has begun implementation of a 44-point dust mitigation plan under NCAP, including the deployment of mechanical sweepers and stricter enforcement on construction practices.

Initiatives like the LEAP (Low Emission Access to Public Transport) programme have supported the introduction of electric vehicles for last-mile connectivity from metro stations, reducing emissions from informal transit modes. Bengaluru is conducting a C40-supported study to define suitable Low Emission Zone (LEZ) areas. This study will identify zones based on emission levels, traffic density, and land use. The findings will inform a phased LEZ implementation, prioritising areas around schools and healthcare facilities.

Through the BCAP, air quality interventions are being integrated with climate and health planning. Air quality is recognised as a cross-cutting issue with mitigation, adaptation, and equity relevance.

From 2025 to 2030, Bengaluru will finalise air pollutant reduction targets for $PM_{2.5}$ and nitrogen dioxide (NO_2), aligning with World Health Organization (WHO) air quality guidelines. The city will launch its LEZ pilot zones based on a current C40 study, and expand its air quality monitoring network, developing a real-time public dashboard. Health alert systems will also be integrated into the city's disaster and emergency response protocols. These interventions aim to achieve cleaner air, safeguard public health, and align air quality efforts with Bengaluru's broader climate and sustainability agenda.

DUBAI, UNITED ARAB EMIRATES

The City of Dubai is advancing its air quality targets through the development and implementation of the Dubai Air Quality Strategy 2030 programme (AQS2030) aimed at reducing emissions, promoting sustainable development and clean energy production, strengthening the national competitive profile, support global goals and directions, promote air quality awareness, and cultivating a healthy and happy society of people breathing clean air.

In 2024, AQS2030 was finalised, establishing baseline pollutant levels and ambitious reduction targets consistent with achieving World Health Organization (WHO) air quality guidelines and United Arab Emirates (UAE) standards:

1. 90% clean air days by 2030 in accordance with WHO air quality guidelines
2. 100% clean air days by 2040 in accordance with UAE national standard
3. Annual average $PM_{2.5}$ in residential areas below 35 µg/m³ (WHO Interim target-1) by 2030

These goals are aligned with the UAE National Air Quality Agenda 2021–31, Dubai Plan 2033, and C40 commitments. To ensure accurate emission baselines and realistic target-setting, a comprehensive Particulate Matter Characterisation and Source Apportionment (SA) Study was reviewed and integrated during the AQS2030 development phase.

Since 2024, AQS2030 has integrated 64 strategic emission reduction initiatives across major sectors, including road transport, energy, industry, aviation, maritime, construction, waste, and fuel distribution. The Dubai Environment and Climate Change Authority (DECCA) monitors and evaluates these initiatives to ensure effective implementation, driving significant reductions in air pollution and reinforcing Dubai's commitment to environmental sustainability.

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CITIES ARE STEPPING UP – FUTURE ACTION

Cities are continuing to demonstrate strong leadership in advancing clean air action. Based on trends observed through Clean Air Accelerator data, signatory cities are expected to sustain their momentum, implementing inclusive and data-driven measures to reduce air pollution and improve public health.

Collectively, this global cohort of 51 mayors will save over 450,000 lives from air pollution by 2040, gaining 5.4 million years of life, and save over $840 billion by reducing air pollution to meet their air quality targets under the Clean Air Accelerator – demonstrating that a future where we all breathe cleaner air is possible.

The following trends are predicted to continue evolving over the coming years.

- **Cities will continue expanding air quality monitoring networks through new sensor technologies, particularly low-cost sensors.** Since 2019 we have seen an increase of 540% for $PM_{2.5}$ sensors and 1,700% for NO_2 sensors. As technologies become more affordable, reliable and accessible worldwide, this trend is set to continue. This evolution is even more evident in Global South cities, where multiple plans have been announced to strengthen monitoring networks and fill gaps at lower costs, especially for those earlier in their air pollution management journey. New sensor technologies are also enabling communities to engage in the policy-making process, and be more aware of the impacts of air pollution.

- **Clean Air Zones (CAZs) are gaining global traction as a comprehensive tool to tackle pollution hotspots,** with many cities across Africa, Europe, Asia, Latin America and Oceania implementing or expanding existing clean air zones, or planning to establish new interventions. This trend showcases that cities in a wide range of contexts are increasingly adopting and adapting area-based restrictions to pollution sources – mostly but not limited to vehicles – and adapting strategies to their local needs. Additionally, clean air zone approaches are driving investment and rapid development in active transport infrastructure. Cities across all regions are continuing to **reprioritise space for people**, ensuring urban environments are healthy and inclusive – fostering resilient, safer and more welcoming cities. Cities are expanding cycling infrastructure, and introducing school streets, pedestrianised streets and increased green infrastructure – which are often seen as enabling actions to set up and expand clean air zones.

- **Vehicle fleet electrification**, especially of buses, is a prominent strategy to tackle air pollution from transportation sources across signatory cities. Collectively, signatory cities have already deployed over 13,000 zero emission buses, mainly with electric buses, but also with trolley buses and hydrogen buses. Cities in all regions are planning the deployment of more new electric buses. In East South East Asia and Oceania, Europe, North America and South West Asia, 16 cities are already delivering on their commitment to only procure zero emission buses for their municipal fleets going forward. European cities are leading this transition, with a greater percentage of their fleets already being zero emission compared to other regions.

- Cities are looking beyond transport to tackle air pollution sources. This involves **improving energy efficiency** and building regulations, promoting **renewable energy**, and encouraging **cleaner cooking and heating** in cities in Africa, Europe, East South East Asia and Oceania, and North America. Cities also reported planned action to tackle pollution from the **waste sector**, through efforts to extend waste management coverage to informal settlements, improve collection, and create biogas, especially in Africa and South West Asia.

Despite measurable progress, many cities still require ambitious and sustained clean air action to achieve significant pollution reductions in alignment with the latest WHO air quality guidelines, particularly to protect the most vulnerable populations. As this report highlights, signatory cities are deploying a range of strategies and policy tools to advance their Climate Action Plans, Air Quality Management plans, and other long-term planning instruments.

However, cities often lack the necessary regulatory authority and financial resources needed to address major sources of air pollution – many of which extend beyond their direct control. Cleaning the air in cities is only possible through coordinated action with national and regional governments. Multi-level governance for clean air is essential to establish regulatory frameworks, set targets, and secure funding for lasting improvements in urban air quality. Strengthening this collaboration will remain a key priority for signatory cities in the years ahead.

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