World Air Quality Report 2025

Contents

About this Report

The 2025 IQAir World Air Quality Report provides a comprehensive overview of air quality across the globe for the calendar year 2025. This Report presents PM2.5 air quality data sourced from 9,446 cities spanning 143 countries, regions, and territories. The information is sourced from more than 40,000 regulatory monitoring stations and low-cost sensors, managed by a wide array of contributors, including government agencies, universities, non-profit organizations, private enterprises, and engaged citizen scientists around the world.

PM2.5 concentrations are reported in micrograms per cubic meter ($\mu g/m^3$), following the World Health Organization (WHO) annual PM2.5 air quality guideline and interim targets. This standardized approach supports effective data visualization and clear risk communication. The air quality metrics featured in this Report are derived from IQAir's real-time monitoring platform, which systematically validates, calibrates, and harmonizes data from monitoring stations worldwide.

To explore historical air quality trends by city, country, and region, the IQAir website features an interactive map showcasing annual city concentrations and global air quality rankings for the 9,446 cities included in the Report. IQAir is committed to fostering engagement, knowledge-sharing, and collective action among governments, educators, researchers, non-profits, businesses, and the public to promote air quality awareness. Our mission is to enable informed discussions and drive actions that improve air quality and protect the well-being of communities globally.

Executive summary

While air pollution has long been recognized as a persistent hazard, 2025 marked a turning point as international institutions finally elevated the crisis to the forefront of the global agenda. This shift was underscored by the 2025 World Economic Forum Global Risks Report, which, for the first time, dedicated a specific section to air pollutants and ranked the issue as a top-tier global risk.[1,2] Alongside these economic warnings, the United Nations General Assembly formally categorized air pollution as a major risk factor for non-communicable diseases, including cardiac disease, stroke, and cancer.[3] To operationalize these goals, the World Health Assembly has approved a landmark roadmap to halve deaths from air pollution by 2040.[4]

However, translating this global consensus into measurable impact remains a challenge as environmental volatility increases. Wildfires, bolstered by climate change, played a primary role in degrading global air quality in 2025. Record emissions from Europe and Canada contributed to a global release of approximately 1,380 megatonnes of carbon from biomass burning.[5]

Last year's World Air Quality Report incorporated data from 8,954 cities in 138 countries, regions, and territories. The current Report expanded to cover 9,446 cities in 143 countries, regions, and territories. An increase in 2025 data contributions from West Asia, notably the inclusion of Iran, Syria, and Jordan, resulted in a 33% increase in the number of cities covered. While this region remains the least represented and has been historically undermonitored, this growth marks a critical step toward closing global data gaps. Notably, Burundi, Turkmenistan, and Togo—all of which ranked among the top 30 most polluted countries in 2024—are absent from this year's Report due to a lack of available data.

Globally, just 13 countries, regions, and territories saw annual average PM2.5 concentrations meeting the WHO annual PM2.5 guideline of 5 μg/m³, with the majority located in the Latin America and Caribbean region. Yet, the 2025 data serves as a critical reminder that air quality is not a static achievement, but a fragile asset. In 2025, wildfire activity severely impacted regions that have historically experienced relatively low PM2.5 levels. As a result, only 14% of global cities met the WHO annual PM2.5 guideline in 2025, compared to 17% in 2024. This downward trend serves as a stark reminder that maintaining clean air requires active stewardship and a proactive strategy—regardless of historical performance. Maintaining clean air is a long-term commitment to incremental improvement rather than a single policy goal achieved or annual target concentration reached. For children, however, the impact of air pollution exposure can last a lifetime; the respiratory damage sustained during developmental years is often irreversible. As the demographic with the least agency in these environmental shifts, children are left to bear the permanent health costs of air quality they did not choose.

Where does the data come from?

The Report uses only empirically measured PM2.5 data gathered from ground-level air quality monitoring stations. The data is compiled from both regulatory air quality monitoring networks and low-cost sensors operated by government agencies, academic institutions, non profits, and citizen scientists who track air quality. While many reports and platforms utilize satellite based models, most of the data in the WAQR is collected in real time, with additional historical year-end datasets incorporated to ensure a thorough and globally representative analysis.

Monitoring stations and sensors are grouped into "settlements"—encompassing cities, towns, villages, counties, or municipalities—based on population distribution and administrative boundaries. In this Report, these "settlements" are collectively termed cities. Annual PM2.5 concentrations and rankings for countries and regions are derived as population-weighted averages of city-level data.

Why PM2.5?

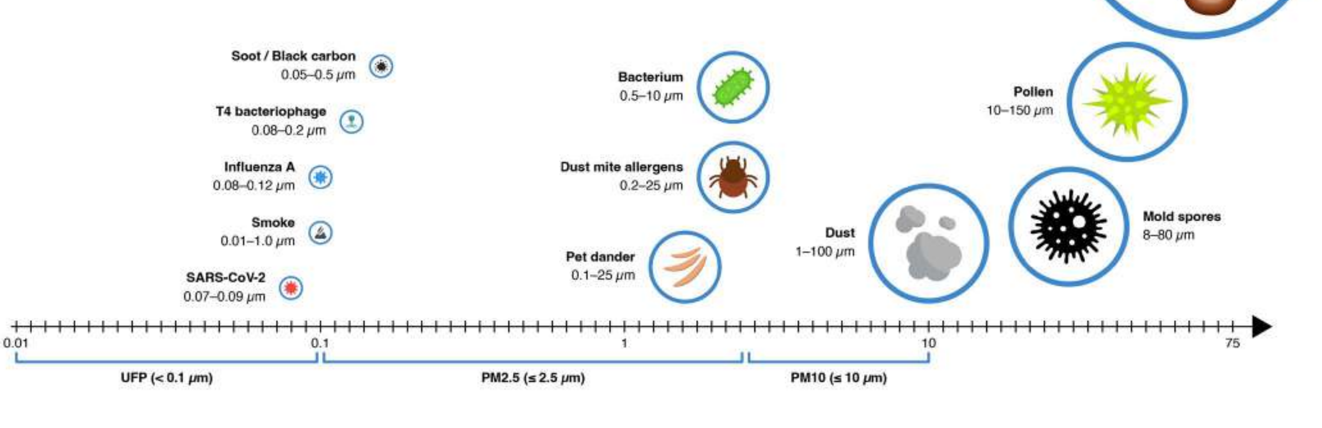
PM2.5, or fine particulate matter with a diameter of 2.5 microns or less, is the primary metric for this Report. Reported in micrograms per cubic meter (µg/m³), PM2.5 is one of the six critical pollutants monitored worldwide due to its severe negative impact on human health.

PM2.5 originates from diverse sources, resulting in varying chemical and physical properties. Its common components include sulfates, nitrates, ammonium, and black carbon. Major human-made sources are combustion engines, industrial emissions, power plants, agricultural burning, and residential wood or coal burning, while natural sources include dust storms, wildfires, and sandstorms.

Particulate size matters: **Comparing sizes**

Small particles pose the greatest risk to human health. While the nose can filter most coarse particles, fine and ultrafine particles are inhaled deeper into the lungs where they can be deposited or even pass into the bloodstream.

Measurement indicate microns in diameter (µm).



Bangkok: A city-led model for public engagement

Governor Chadchart Sittipunt highlights the progress of the Bangkok-IQAir partnership. The low-cost sensor map tracks real-time data across Bangkok with data from nearly 100 participating schools.

As air pollution remains a recurring challenge, Bangkok has taken proactive steps to strengthen how it monitors and communicates environmental data. Through its partnership with IQAir, the city has expanded access to reliable, real-time air quality information across districts—reinforcing its commitment to transparency and public health.

Rather than treating air monitoring as a purely technical and regulatory function, Bangkok has deemed it a public resource. Monitoring station data is made openly available, enabling residents to better understand local conditions and make informed decisions in their daily lives. This approach reflects the city's broader emphasis on evidence-based policy and community awareness.

A defining feature of this initiative is the involvement of schools. Monitoring devices installed at educational institutions not only help safeguard student health but also support STEM and environmental literacy. Students and teachers gain direct access to localized air quality data, turning campuses into centers of awareness and engagement. In doing so, Bangkok encourages young people to better understand their environment and participate in conversations about urban sustainability.

By combining city leadership, data transparency, and school participation, Bangkok sets a powerful example of how municipalities can use environmental monitoring to strengthen civic engagement. The collaboration between Bangkok and IQAir demonstrates how public/private city partnerships can go beyond infrastructure deployment and ignite civic interest. By combining sensor, data and communication expertise, IQAir seeks to support cities to build participatory environmental ecosystems.

Visit https://www.iqair.com/us/how-iqair-partners-with-cities to learn how cities can partner with IQAir to build sustainable, participatory air quality ecosystems.

Data presentation

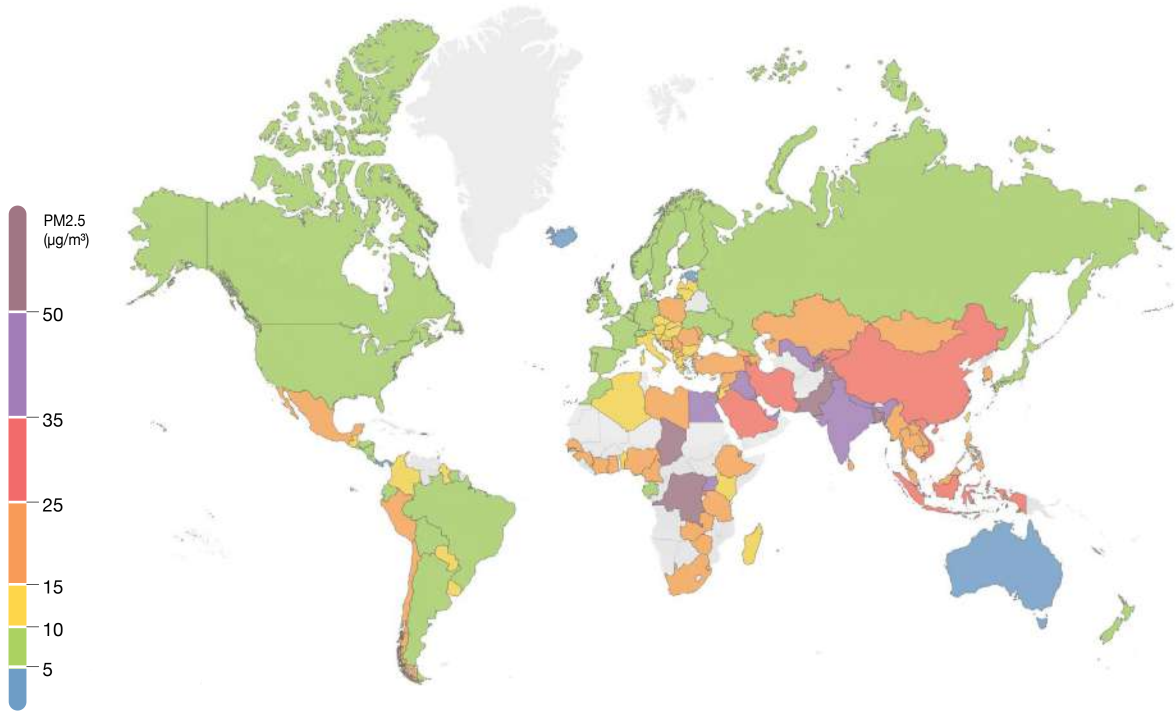
This Report uses the World Health Organization (WHO) annual air quality guideline levels and interim targets for PM2.5 for data visualization. This method helps highlight cities and regions most exposed to health risks from PM2.5 pollution.

The color-coding system in the following table consists of seven distinct colors. This system is used throughout the Report. Each color represents a specific range of PM2.5 concentrations, aligned with WHO guidelines or targets. The colors transition from blue, indicating locations that meet the WHO annual guideline, to maroon, which signifies concentrations exceeding the guideline by more than tenfold.

World Air Quality Report visualization framework

Annual PM2.5 breakpoints based on WHO annual PM2.5 guideline and interim targets	PM2.5	Color code	WHO levels
Meets WHO PM2.5 guideline	0-5 (μg/m³)	Blue	Air quality guideline
Exceeds WHO PM2.5 guideline by 1 to 2 times	5.1-10 (μg/m³)	Green	Interim target 4
Exceeds WHO PM2.5 guideline by 2 to 3 times	10.1-15 (μg/m³)	Yellow	Interim target 3
Exceeds WHO PM2.5 guideline by 3 to 5 times	15.1-25 (μg/m³)	Orange	Interim target 2
Exceeds WHO PM2.5 guideline by 5 to 7 times	25.1-35 (μg/m³)	Red	Interim target 1
Exceeds WHO PM2.5 guideline by 7 to 10 times	35.1-50 (μg/m³)	Purple	Exceeds target levels
Exceeds WHO PM2.5 guideline by over 10 times	>50 (μg/m³)	Maroon	Exceeds target levels

2025 Global PM2.5 map



2025 global map color coded by annual average PM2.5 concentration.

Continuing a trend observed in 2024 and prior years, the highest population-weighted national annual average PM2.5 concentrations remain concentrated within Africa and the Central and South Asia regions. Africa's representation in the data has expanded significantly this year with the inclusion of seven countries and territories not present in last year's Report: Guinea, Eswatini, Tanzania, Benin, Morocco, the Canary Islands, and Réunion. While this expanded data set is a positive step, continued efforts are essential to build out monitoring networks that can more accurately reflect the lived air quality experiences of these populations.

In total, this Report features 7 new countries. This growth is driven primarily by Africa (seven new entries), followed by West Asia with three, and Oceania and Europe with one each. On a positive note, 13 countries globally reported annual average concentrations below 5 µg/m³, successfully meeting the WHO air quality guidelines. The majority of these nations are located within Latin America & Caribbean as well as Oceania regions.

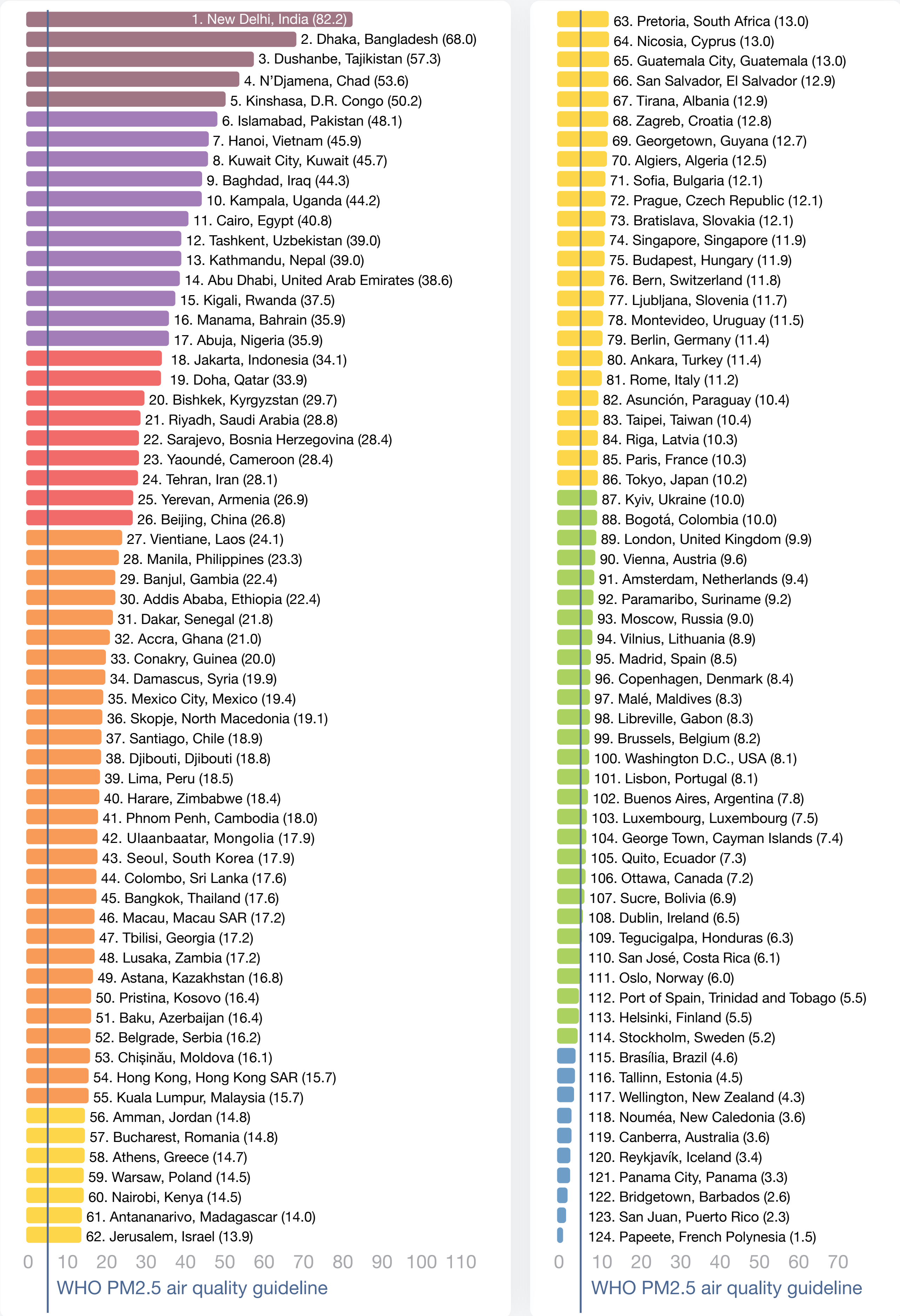
2025 Country/region ranking

Population weighted, 2025 average PM2.5 concentration (µg/m³) for countries, regions, and territories in descending order.

1	Pakistan	67.3
2	Bangladesh	66.1
3	Tajikistan	57.3
4	Chad	53.6
5	D.R. Congo	50.2
6	India	48.9
7	Kuwait	45.7
8	Uganda	43.0
9	Egypt	40.6
10	Uzbekistan	38.1
11	Iraq	38.1
12	Nepal	37.4
13	United Arab Emirates	36.4
14	Bahrain	35.9
15	Rwanda	34.5
16	Qatar	33.9
17	Indonesia	30.0
18	Vietnam	29.7
19	Kyrgyzstan	29.7
20	China	29.6
21	Saudi Arabia	28.9
22	Iran	28.1
23	Gambia	27.7
24	Armenia	26.9
25	Libya	24.4
26	Myanmar	23.5
27	Kazakhstan	23.4
28	Nigeria	23.4
29	Bosnia Herzegovina	23.4
30	Laos	22.6
31	Ethiopia	22.4
32	Senegal	21.8
33	Ghana	21.3
34	North Macedonia	21.2
35	Cameroon	21.0
36	Syria	20.5
37	Guinea	20.0
38	Serbia	19.8
39	Turkey	19.2
40	Peru	19.1
41	Philippines	19.0
42	Sri Lanka	18.9
43	Eswatini	18.9
44	Djibouti	18.8
45	Zimbabwe	18.4
46	Cambodia	18.1
47	Mongolia	17.8
48	Thailand	17.8
49	Zambia	17.6
50	Mexico	17.6
51	Tanzania	17.5
52	Palestine	17.4
53	Macau SAR	17.2
54	Chile	17.2
55	South Korea	17.1
56	Georgia	16.9
57	Israel	16.6
58	Montenegro	16.5
59	Azerbaijan	16.4
60	Malaysia	16.0
61	Ivory Coast	15.8
62	Moldova	15.7
63	Hong Kong SAR	15.7
64	South Africa	15.5
65	Romania	15.4
66	Poland	15.4
67	Greece	14.9
68	Jordan	14.8
69	Benin	14.4
70	Madagascar	14.0
71	Kenya	13.5
72	Croatia	13.4
73	Taiwan	13.3
74	Italy	13.3
75	Guyana	13.2
76	Guatemala	13.0
77	Czech Republic	13.0
78	Slovakia	12.7
79	Hungary	12.7
80	Bulgaria	12.7
81	Albania	12.6
82	Algeria	12.5
83	Slovenia	12.4
84	Singapore	11.9
85	Cyprus	11.8
86	Uruguay	11.5
87	Kosovo	11.5
88	Colombia	11.1
89	Lithuania	10.5
90	Latvia	10.5
91	Paraguay	10.4
92	Austria	10.4
93	Brazil	10.0
94	Ukraine	9.8
95	Japan	9.8
96	Switzerland	9.7
97	San Marino	9.7
98	Netherlands	9.7
99	Russia	9.6
100	Morocco	9.6
101	France	9.6
102	Germany	9.4
103	Belgium	9.3
104	Suriname	9.2
105	Spain	9.1
106	Malta	8.9
107	El Salvador	8.9
108	Nicaragua	8.8
109	Maldives	8.8
110	United Kingdom	8.7
111	Gabon	8.3
112	Denmark	8.2
113	Anguilla	8.0
114	Portugal	7.9
115	Argentina	7.7
116	Luxembourg	7.4
117	Cayman Islands	7.4
118	Canada	7.4
119	USA	7.3
120	Ecuador	7.3
121	Canary Islands	7.2
122	Ireland	6.8
123	Bolivia	6.4
124	Honduras	6.3
125	Norway	6.2
126	Costa Rica	6.1
127	Trinidad and Tobago	5.5
128	Sweden	5.5
129	Finland	5.2
130	New Zealand	5.1
131	Estonia	4.9
132	Panama	4.8
133	Grenada	4.7
134	Australia	4.4
135	Réunion	4.3
136	Andorra	4.3
137	Bermuda	3.8
138	Iceland	3.7
139	New Caledonia	3.6
140	Barbados	2.6
141	U.S. Virgin Islands	2.5
142	Puerto Rico	2.4
143	French Polynesia	1.8

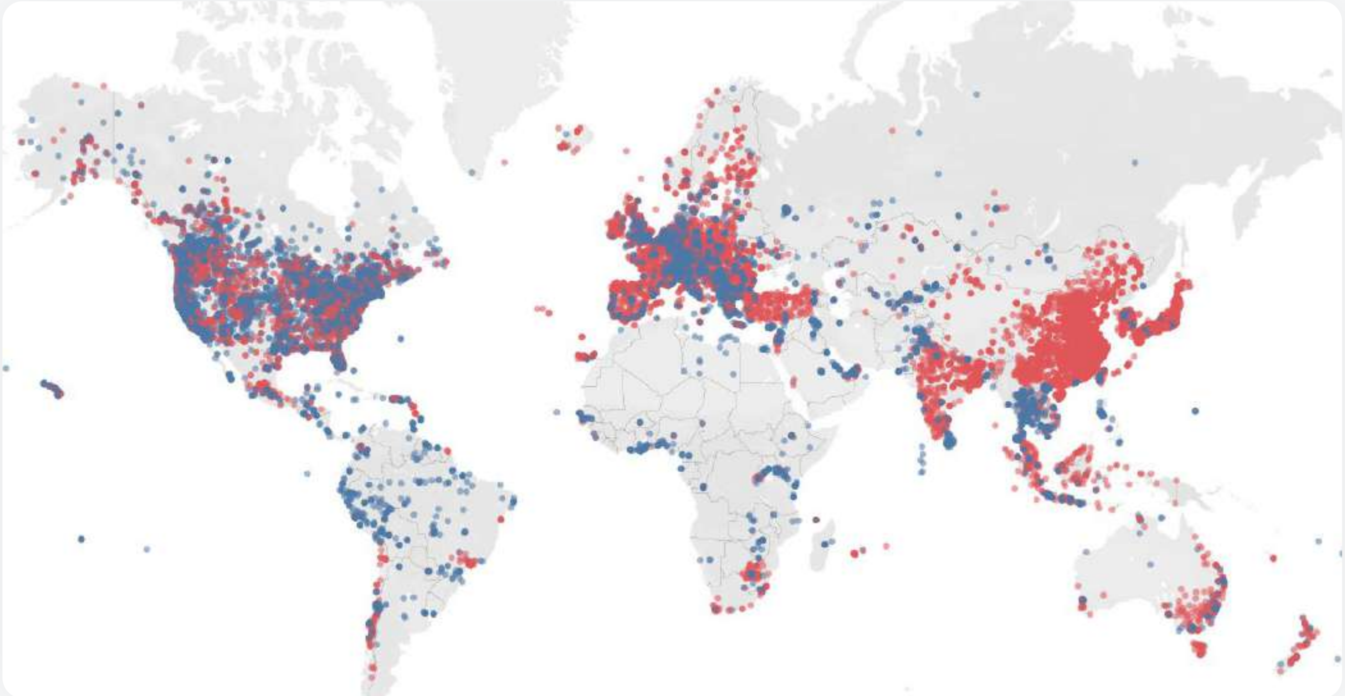
2025 Regional capital city ranking

2025 average PM2.5 concentration (µg/m³) for capital cities in descending order.



Overview of public monitoring status

Global distribution of PM2.5 monitoring stations



Global distribution of PM2.5 air quality monitoring stations providing data included in this Report. Blue markers denote independently operated monitoring stations, while red markers indicate government-operated stations.

The global landscape of air quality monitoring reveals a stark disparity in infrastructure. Africa and West Asia remain significantly underrepresented in terms of station density, despite hosting some of the world's most polluted cities. This data gap was further exacerbated by the cessation of public reporting from U.S. Embassy and Consulate locations in March 2025, depriving many cities of their trusted primary data source.

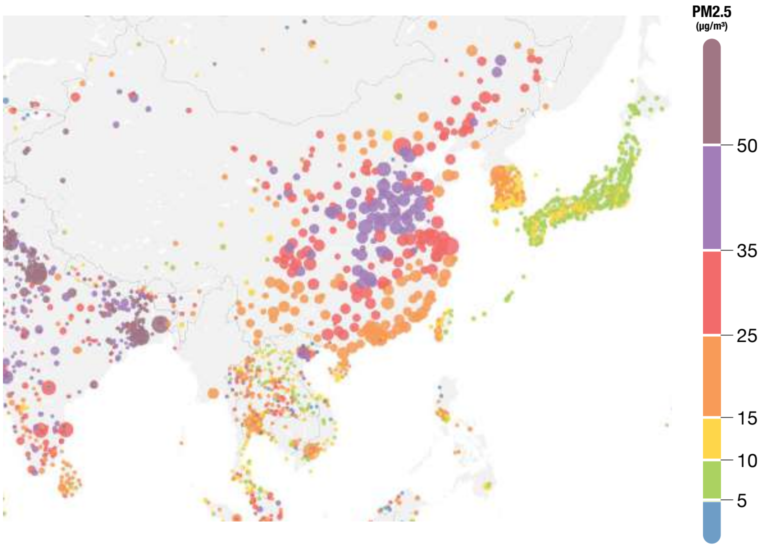
In response to these gaps in government infrastructure, community-led and individually operated non-government stations have become indispensable. These lower-cost, low-maintenance devices provide essential data in remote or historically underrepresented areas, offering a higher resolution of air quality mapping than government networks alone. In 2025, non-government-operated air quality monitors provided the only real time data for many countries and territories including Albania, Antarctica*, Argentina, Armenia, the Bahamas*, Barbados, Belarus*, Benin, Bermuda, Bolivia, Burundi*, Cameroon, Cape Verde*, Cayman Islands, Costa Rica, Curaçao*, Djibouti, Dominican Republic*, Ecuador, Eswatini, Fiji*, French Polynesia, Gabon, Gambia, Grenada, Iran, Jamaica*, Lebanon*, Liberia*, Libya, Malawi*, Maldives, Moldova, Monaco*, Montserrat*, Morocco, Namibia*, Nicaragua, Northern Mariana Islands*, Panama, Republic of the Congo*, Sierra Leone*, Sudan*, Suriname, Syria, Togo*, Trinidad and Tobago, Tunisia*, U.S Virgin Islands, Uruguay, Venezuela*, Zambia, and Zimbabwe.

To further bridge these gaps and enhance equity in data access, IQAir donates air quality monitors for installation in underrepresented regions. Help improve the global air quality map by submitting an application to host a monitor.

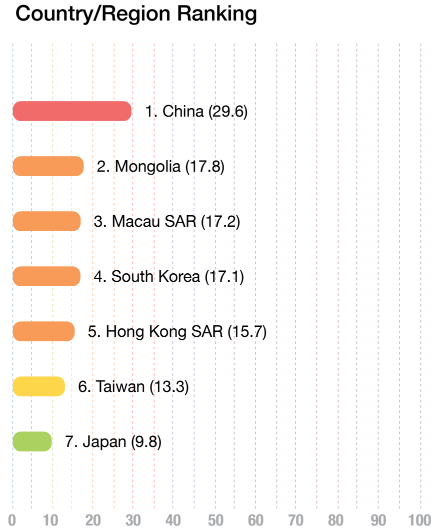
**Cities in these countries and territories did not meet the required limit of 60% annual data availability and were therefore excluded from the Report.*

EAST ASIA

China Mainland | Hong Kong SAR | Japan | Macau SAR | Mongolia | South Korea | Taiwan



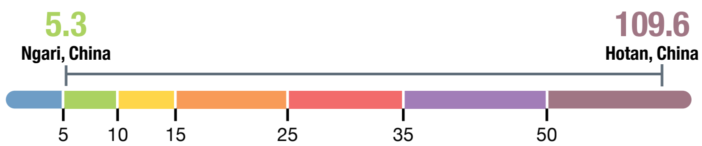
City markers indicating 2025 PM2.5 levels, size adjusted for population



2025 PM2.5 average (µg/m³)

0%

Regional cities that met the WHO annual PM2.5 guideline in 2025



Range of 2025 average PM2.5 (µg/m³) across regional cities

Most Polluted Regional Cities

Rank	City	2025
1	Hotan, China	109.6
2	Kashgar, China	84.0
3	Kizilsu, China	79.7
4	Aksu, China	74.9
5	Wujiaqu, China	52.0
6	Turpan, China	45.6
7	Xianyang, China	44.0
8	Luohe, China	43.8
9	Heze, China	43.6
10	Xuchang, China	43.5
11	Kaifeng, China	43.3
12	Hebi, China	43.1
13	Anyang, China	42.9
14	Jingzhou, China	42.7
15	Jiyuan, China	42.6

Least Polluted Regional Cities

Rank	City	2025
1	Ngari, China	5.3
2	Miyako, Japan	5.6
3	Kushiro, Japan	6.0
4	Tomakomai, Japan	6.0
5	Kamaishi, Japan	6.2
6	Nyingchi, China	6.3
7	Kuji, Japan	6.3
8	Obihiro, Japan	6.4
9	Sapporo, Japan	6.4
10	Oshu, Japan	6.4
11	Hakodate, Japan	6.6
12	Kitami, Japan	6.6
13	Takizawa, Japan	6.7
14	Kurihara, Japan	6.7
15	Nago, Japan	6.7

SUMMARY

In 2025, the East Asia region was represented by 1,264 cities across seven countries. Air quality trends at the city level generally worsened as 916 (73%) cities recorded increased annual average PM2.5 concentrations compared to 2024, while 312 (25%) reported decreases and 20 (2%) remained unchanged. At the national level, annual average concentrations rose in two countries and fell in five. Japan saw the largest relative increase, climbing 14% to 9.8 µg/m³. Conversely, Mongolia showed significant progress with a 31% decrease, dropping from 25.6 µg/m³ to 17.8 µg/m³.

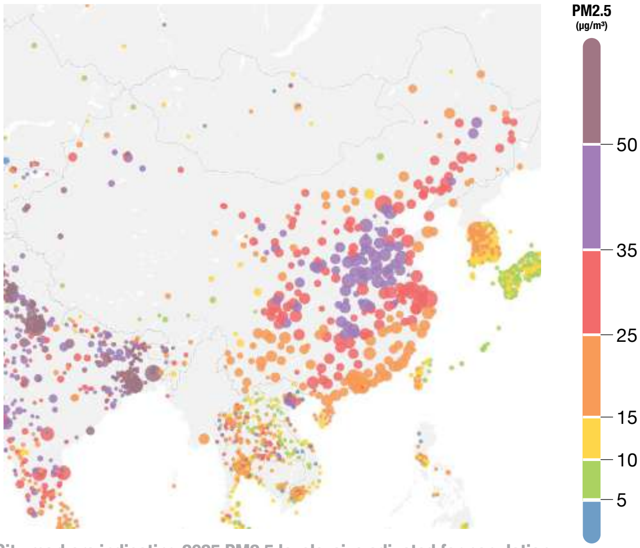
Despite these shifts, no country in the region met the WHO annual guideline. China recorded the highest national average at 29.6 µg/m³, a very slight drop from the 2024 average of 31 µg/m³ and continues to remain nearly six times the WHO annual guideline value. Most other countries in the region fell within the 15 to 20 µg/m³ range.

The regional extremes, cities with the highest and lowest PM2.5 annual concentrations, were both found in China. Hotan remained the most polluted city with an average of 109.6 µg/m³, while Ngari recorded the region's lowest concentration at 5.3 µg/m³, narrowly missing the WHO annual guideline. This is the second consecutive year no regional city achieved the WHO annual PM2.5 guideline.

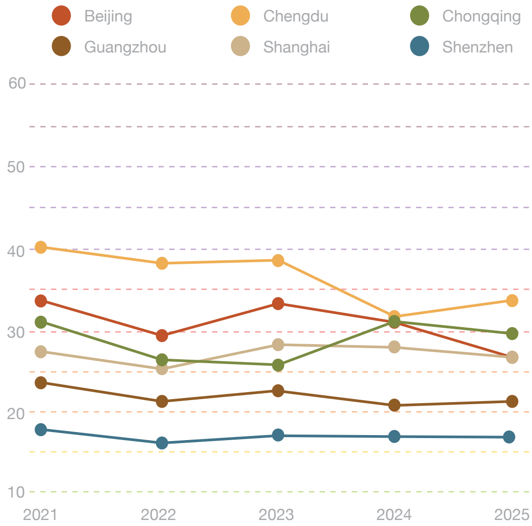
MONITORING STATUS

A total of 16 new cities across four countries were added in East Asia in 2025. China contributed the largest number of new cities, with seven additions, followed by South Korea and Japan with four each. Among these new entries, Japan provided data for the four cities with the lowest annual average PM2.5 concentrations, all of which were below 15 µg/m³. Government-operated monitoring stations accounted for 98% of the reported regional data, reflecting the highest proportion of government operated to low-cost sensor station data of any region included in the Report.

CHINA MAINLAND



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual mean (μg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Beijing	26.8	28.2	25.0	39.5	26.3	30.9	22.5	16.7	16.2	19.0	31.2	34.0	31.4	31.0
Chengdu	33.8	65.8	30.8	33.9	36.3	35.9	22.7	16.4	16.6	16.7	17.5	43.6	68.3	32.0
Chongqing	29.9	72.3	33.6	32.5	36.9	28.0	15.5	12.2	12.8	16.5	15.7	31.5	54.1	31.1
Guangzhou	21.3	35.0	24.9	21.3	29.3	17.5	10.6	16.1	14.0	11.7	19.8	20.7	34.7	20.8
Shanghai	26.8	41.6	39.4	29.4	35.1	26.3	17.9	12.1	15.8	14.7	16.5	38.1	36.6	28.2
Shenzhen	16.8	28.0	19.8	16.2	23.9	14.2	6.5	13.1	8.8	7.1	14.9	19.9	28.7	16.9

PROGRESS

China's national annual average PM2.5 concentration declined from 31 μg/m³ in 2024 to 29.6 μg/m³ in 2025 representing a 5% reduction. At the city level, Beijing, Shanghai, Chongqing, and Shenzhen recorded small reductions in annual average concentrations, while Chengdu and Guangzhou saw slight increases. Overall, 117 cities reported increases in annual average PM2.5 concentrations compared with 2024, five cities remained the same, and 210 cities recorded decreases. An additional seven new cities were included in this year's Report.

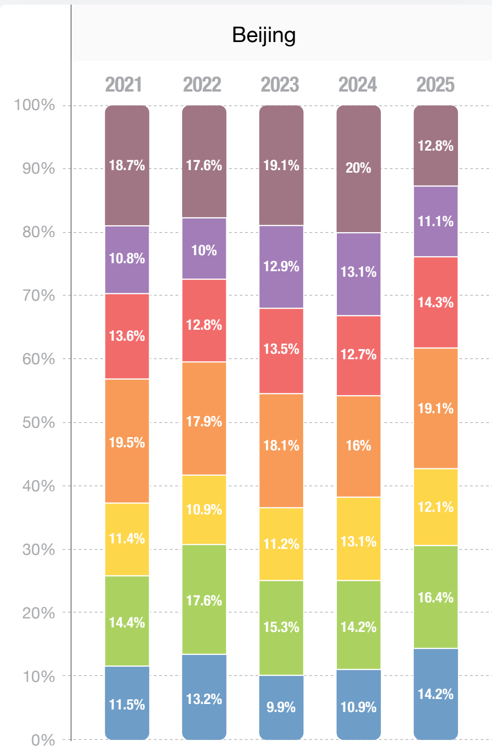
Cities in the western province of Xinjiang reported a 20% average increase in annual PM2.5 levels compared to 2024, reflecting a broader migration of heavy industries, such as coal to chemical plants, moving west to capitalize on the region's significant coal reserves.[6] Xinjiang is home to the most polluted city in China, Hotan, ranked 2nd most polluted globally, and the city of Aksu who reporting a massive 60% increase in PM2.5 levels compared to 2024. Henan Province accounted for five of the next seven most polluted cities in the 2025 Report. Although several provinces with historically high concentrations, including Hebei, Henan, Hubei, and Hunan, showed declines in many cities, annual average PM2.5 levels remained elevated overall. Most cities in these provinces continued to report concentrations above 30 μg/m³.

CHALLENGES

China continued to grapple with persistent air quality challenges in 2025, despite progress in reducing national PM2.5 levels. Coal combustion in northern provinces, coal power plants, industrial emissions, transportation, and rural biomass burning are major sources of pollution.[7,8] Dust storms from Mongolian and Chinese deserts worsened air quality in northern and western regions.[9,10] Despite efforts to mitigate dust, large dust storms exacerbated by climate change and desertification continued to impact air quality.[11]

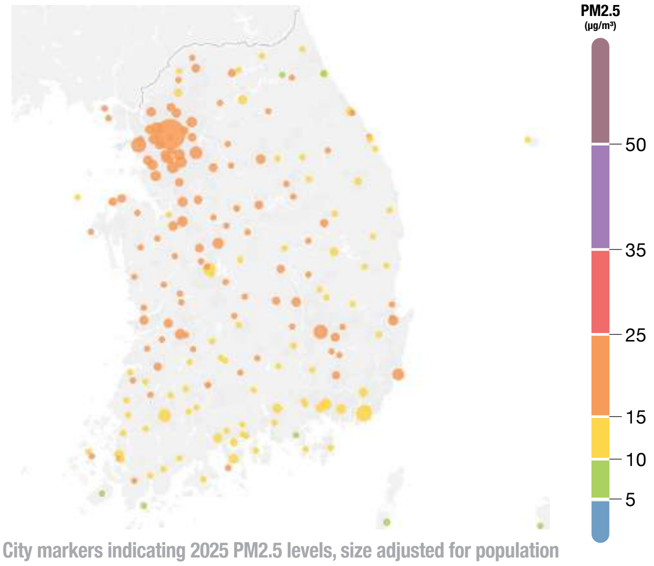
HIGHLIGHT: AIR POLLUTION SHIFTS TO OTHER REGIONS

In 2025, China's air pollution landscape experienced a distinct geographic shift. While industrial hubs like Beijing, Tianjin, Hebei, and Henan saw modest declines in PM2.5 levels, emissions rose sharply in western provinces. Xinjiang, in particular, recorded a significant spike in air pollution. This was driven by the expansion of coal production and the relocation of energy-intensive industries including steel, non-ferrous metals, and coal-to-chemical plants.[12] This industrial migration, combined with sandstorms, biomass burning, and weak enforcement of fireworks and crop stubble burning, continues to degrade regional air quality.[13] Although targeted improvement initiatives in eastern China are producing results, the overall progress remains uneven as western regions face worsening outcomes, and eastern cities still struggle with year-round pollution.

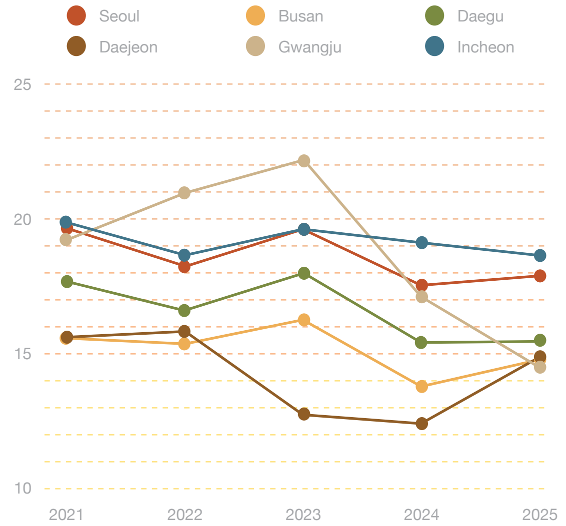


Annual hours spent at different PM2.5 pollution levels

SOUTH KOREA



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (µg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Seoul	17.9	27.9	20.2	29.5	21.4	19.3	16.9	12.1	10.9	8.4	8.4	21.1	19.2	17.5
Busan	14.8	21.9	16.9	19.8	16.5	14.3	15.1	11.3	11.5	7.9	8.4	16.7	17.3	13.8
Daegu	15.5	23.7	16.7	19.3	16.9	15.4	15.6	11.3	11.3	8.0	9.0	19.9	19.2	15.4
Daejeon	14.9	24.6	18.1	24.7	18.1	14.8	12.3	6.0	5.6	5.5	8.5	21.4	17.8	12.4
Gwangju	14.5	21.5	16.1	23.9	16.9	14.2	13.4	9.4	8.0	7.2	10.1	18.1	16.5	17.1
Incheon	18.7	25.1	19.9	29.9	21.1	19.2	18.0	16.3	14.0	11.1	10.4	21.1	18.1	19.1

PROGRESS

In South Korea, the national annual average PM2.5 concentration rose slightly from 17 µg/m³ in 2024 to 17.1 µg/m³ in 2025. While major urban centers like Seoul, Busan, Daegu, and Daejeon saw rising pollution levels, Gwangju and Incheon reported improvements. Notably, Gwangju's annual average dropped below 15 µg/m³ for the first time since 2017. Across the country, 135 cities saw rising PM2.5 levels, five remained unchanged, and 46 reported decreases. Four new cities were also included in 2025 that were not present in 2024.

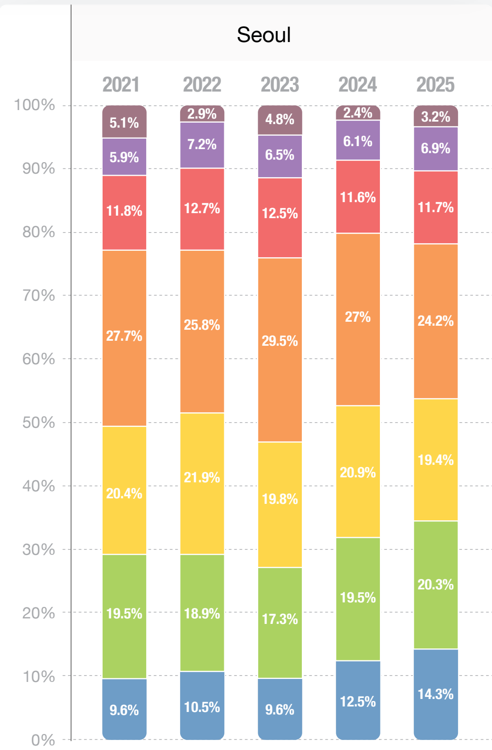
Regionally, Gyeongsangnam-do experienced higher PM2.5 concentrations in nearly every city, a trend largely driven by a severe wildfire season that impacted the southeastern region. Despite these spikes, the country's highest PM2.5 levels remained concentrated in the northwest. Eight of the ten most polluted cites in South Korea were located in Gyeonggi-do and Chungcheongnam-do provinces, underscoring the persistent geographic concentration of poor air quality in the industrial and densely populated northwestern corridor.

CHALLENGES

South Korea continues to face persistent air quality challenges driven by a combination of domestic and transboundary pollution. Seasonal dust storms from China and Mongolia significantly degrade air quality during spring and winter, while industrial activity, both domestic and transboundary, serves as a constant source of particulate matter.[14,15] A primary domestic contributor remains coal combustion from the nation's power plants, particularly during winter months. To address this, the government has accelerated its energy transition, establishing a plan to retire all remaining coal-fired plants by 2040.[16]

HIGHLIGHT: HISTORIC WILDFIRES

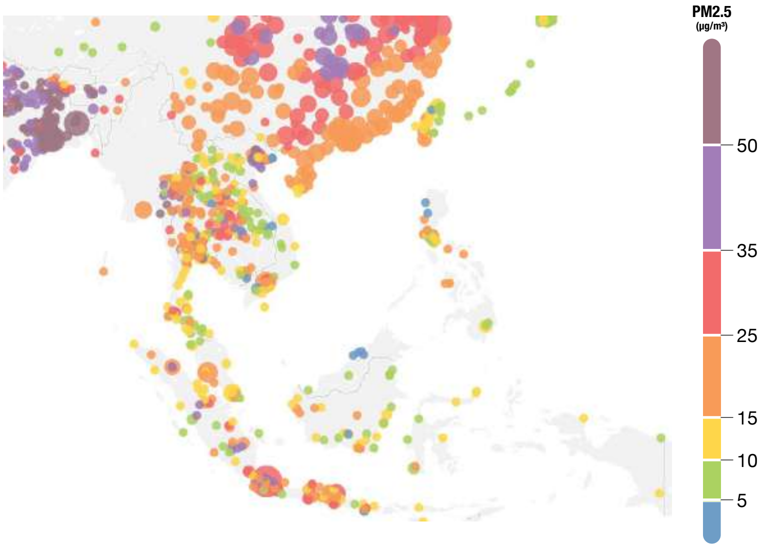
From late March through mid-May 2025, South Korea was ravaged by a series of wildfires that scorched 43,330 acres and resulted in 24 fatalities.[17] Although fires in the country are common during this period, the 2025 events were the deadliest the nation had experienced in decades. Fueled by prolonged drought and high velocity winds, the blazes blanketed vast areas in smoke, triggered mass evacuations, and displaced 30,000 people.[18] Beyond the human toll, the fires caused irreparable cultural loss, destroying a 1,300-year-old Buddhist temple along with 18 other designated heritage sites or artifacts. The devastation was ultimately a result of a combination of record-dry conditions coupled with the highly volatile resin of the region's pine forests, creating an intensity that rendered conventional firebreaks and containment strategies ineffective.[19]



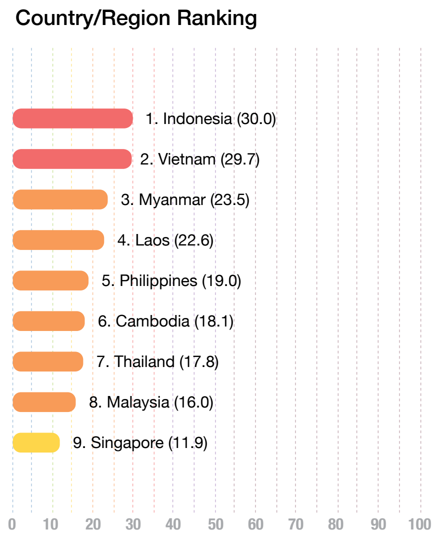
Annual hours spent at different PM2.5 pollution levels

SOUTHEAST ASIA

Cambodia | Indonesia | Laos | Malaysia | Myanmar | Philippines | Singapore | Thailand | Vietnam



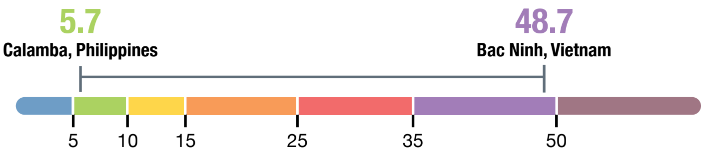
City markers indicating 2025 PM2.5 levels, size adjusted for population



2025 PM2.5 average (µg/m³)

0%

Regional cities that met the WHO annual PM2.5 guideline in 2025



Range of 2025 average PM2.5 (µg/m³) across regional cities

Most Polluted Regional Cities

Rank	City	2025
1	Bac Ninh, Vietnam	48.7
2	Van Giang, Vietnam	46.6
3	Hanoi, Vietnam	45.9
4	Cikande, Indonesia	45.0
5	Depok, Indonesia	42.6
6	Hung Yen, Vietnam	40.7
7	Tangerang, Indonesia	39.3
8	Huyen Kim Boi, Vietnam	37.0
9	Hai Ba Trung, Vietnam	36.5
10	Vinh Yen, Vietnam	36.1
11	Serpong, Indonesia	35.4
12	Thanh Pho Thai Binh, Vietnam	35.2
13	Bandung, Indonesia	34.6
14	Bac Giang, Vietnam	33.7
15	Om Noi, Thailand	32.2

Least Polluted Regional Cities

Rank	City	2025
1	Calamba, Philippines	5.7
2	Palu, Indonesia	7.0
3	Carmona, Philippines	7.7
4	Ban Tai, Thailand	7.7
5	Pelabuhanratu, Indonesia	8.2
6	Bontang Baru, Indonesia	8.3
7	Nuea Khlong, Thailand	8.4
8	Krajan Satu, Indonesia	8.5
9	Tarakan, Indonesia	8.5
10	Kuching, Malaysia	8.7
11	Imus, Philippines	8.7
12	Pangkalpinang, Indonesia	8.8
13	Ban Ko Kaeo, Thailand	8.8
14	Betong, Thailand	9.1
15	Tanjung Tokong, Malaysia	9.2

SUMMARY

Air quality progress across Southeast Asia was notably mixed in 2025, as fluctuating annual PM2.5 concentrations reflected both significant environmental gains and emerging challenges. Encouragingly, the region reached a collective milestone: for the first time, every country successfully met the WHO Interim Target 1 by maintaining annual concentrations below 35 µg/m³. This progress was headlined by Laos, Myanmar, Indonesia, Thailand, Malaysia, and Cambodia, all of which continued their year-over-year improvements. Laos, Cambodia, and Indonesia recorded the most substantial gains, with particulate matter decreases of 18%, 17%, and 15.5% respectively.

Conversely, some nations faced setbacks in their air quality goals. Vietnam and Singapore reported slight increases in pollution levels, while the Philippines saw a sharp 28% rise, with concentrations climbing from 14 µg/m³ in 2024 to 19 µg/m³ in 2025.

Indonesia ultimately recorded the highest annual concentration at 30 µg/m³. While this represents a successful reduction from previous years, the country remains vulnerable to pollution from industrial activity, coal-fired power plants, and wildfires. These issues are particularly acute during the dry season from May through October, when biomass burning often triggers regional concerns. Ultimately, transboundary haze remains a shared struggle for all Southeast Asian nations, signaling that while local improvements are vital, long-term success will depend on sustained international cooperation.

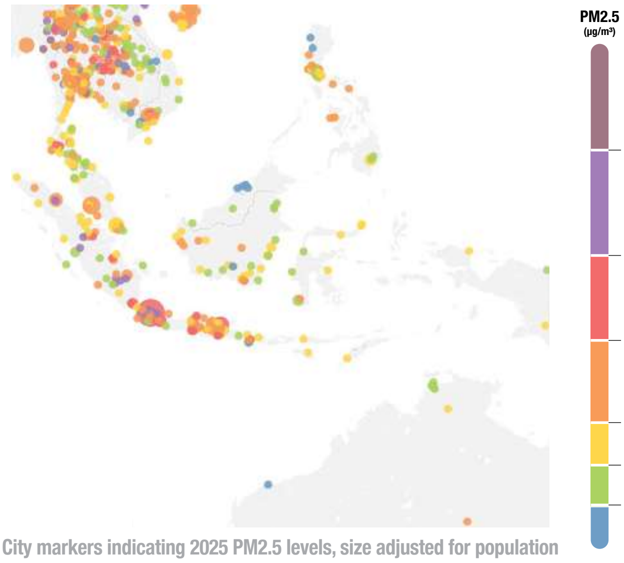
Vietnam followed with the second-highest recorded annual average in the region at 29.7 µg/m³. This was largely driven by a combination of biomass burning, vehicular emissions, and coal combustion. These factors contributed to severe seasonal spikes; in January and December 2025, eight Vietnamese cities recorded monthly average concentrations exceeding 80 µg/m³.

MONITORING STATUS

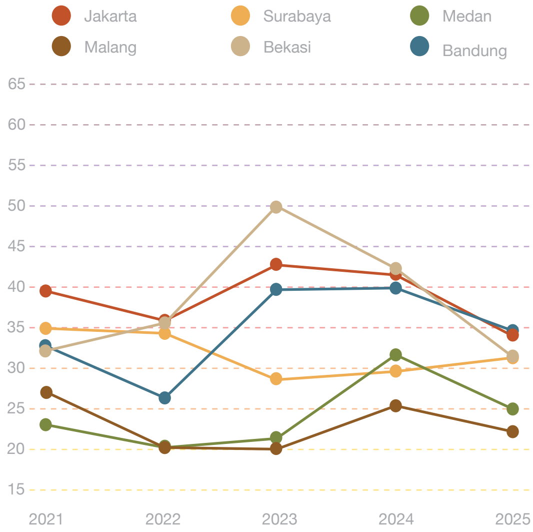
Regional air quality monitoring faces significant challenges regarding the availability and reliability of government-led data. While 406 cities in Southeast Asia were included in this year's Report, fewer than 47%, only 190 cities, were equipped with official government monitoring stations. This gap underscores a critical need: while policy initiatives to reduce emissions are essential, they must be supported by a robust, well-maintained data network to accurately measure progress and validate environmental outcomes.

Despite these gaps, the monitoring footprint is expanding. Indonesia and Vietnam led the region in growth, each contributing 31 new cities to the 2025 Report. The nature of this expansion varies by country; Indonesia's new cities are primarily derived from official government sources, whereas Vietnam and other neighboring nations rely on a mix of both government and non-government monitoring stations. This diversification of data sources is a vital step forward, yet it highlights the ongoing effort required to standardize and stabilize environmental reporting across the region.

INDONESIA



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (µg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Jakarta	34.1	18.4	26.0	22.2	30.9	42.2	54.3	47.4	45.3	44.2	37.9	17.5	21.9	41.7
Surabaya	31.3	24.6	26.9	28.3	43.5	30.6	35.6	37.9	35.3	26.4	30.4	28.6	26.9	29.8
Medan	25.0	24.8	34.7	31.1	21.1	22.4	30.8	25.9	23.0	20.7	20.2	17.5	28.9	31.7
Malang	22.2	16.9	25.9	26.4	18.3	22.2	24.9	23.2	29.6	24.0	22.9	16.1	17.0	25.2
Bekasi	31.5	17.4	25.0	23.1	33.4	40.9	52.0	49.1	37.5	37.8	27.8	14.0	20.0	42.5
Bandung	34.6	19.5	29.9	22.7	32.9	37.7	45.7	41.5	42.4	41.1	42.9	26.1	32.7	40.0

PROGRESS

Indonesia reported a significant decrease in its annual average PM2.5 concentration, which fell by 16% from 35.5 µg/m³ in 2024 to 30 µg/m³ in 2025. This national improvement was mirrored in several key cities including Jakarta, Medan, Malang, Bekasi, and Bandung. Jakarta, the capital and most populous city in the country, reported a substantial decrease of 18% as levels dropped from 41.7 µg/m³ in 2024 to 34.1 µg/m³ in 2025. Regarding broader trends among cities with consistent year-over-year data, 39 cities reported decreases in annual average concentrations while 17 reported increases. The 2025 Report also featured expanded coverage with the addition of 31 new cities, utilizing data primarily sourced from the government.

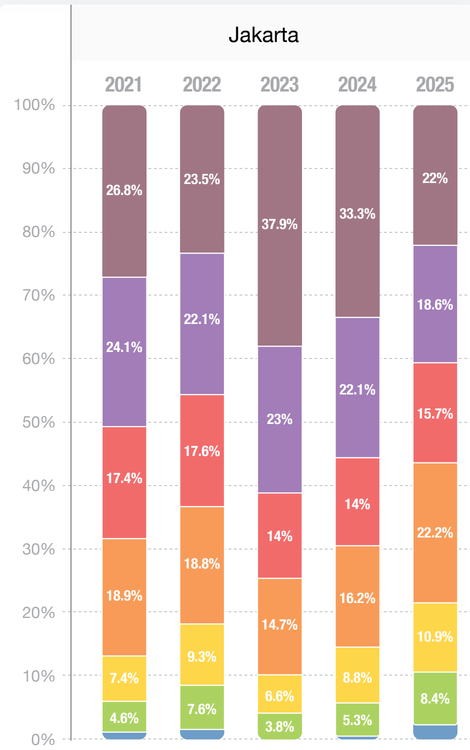
Despite these improvements in air quality, Indonesia remains the most polluted country in the Southeast Asia region. Three cities in Banten and three others in West Java maintain annual average PM2.5 concentrations higher than 35 µg/m³. Agricultural burning and wildfires continue to cause transboundary pollution and seasonal spikes in particulate matter, while transportation emissions remains a persistent problem for air quality in larger urban centers.

CHALLENGES

Indonesia's air quality was impacted by multiple sources in 2025, including peatland and forest fire, smoke, vehicle emissions, road dust, waste burning, biomass burning, and industrial activity. Coal-fired power plants, especially pre-2019 facilities near Jakarta, remained a key source of air pollution in parts of the country.[20] Vehicular emissions, biomass burning, and industrial clusters in Java affected urban air quality, while peatland fires and haze blanketed Sumatra and Kalimantan.[21] Despite legal victories via citizen lawsuits in 2021 and a national goal to reach net-zero emissions by 2060, enforcement gaps and limited PM2.5 controls result in sustained pollution hotspots.[22,23,24]

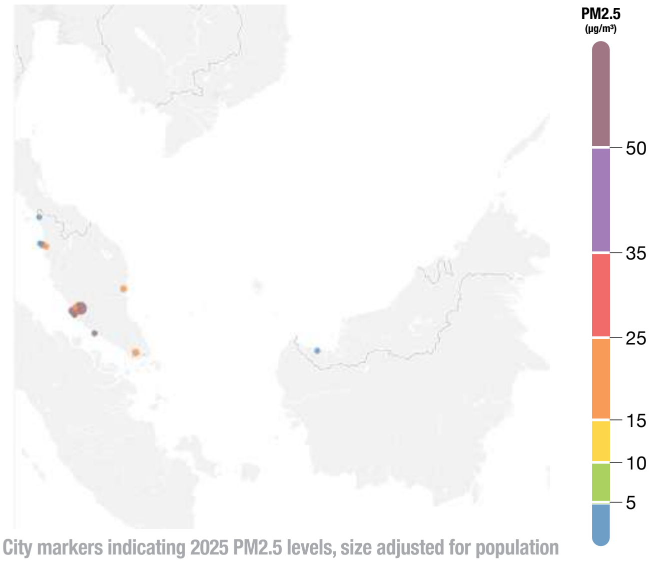
HIGHLIGHT: PULPWOOD PLANTATION BURNING

Indonesia's pulpwood and biomass plantations were investigated by NGOs for widespread deforestation, peatland burning, and illegal land clearance, despite corporate sustainability pledges. A coalition of 13 NGOs documented violations across 33 plantations in 11 provinces between 2023 and 2025, with 6,741 hectares burned in South Sumatra alone, contributing to the region's seasonal haze concerns.[24] Documented incidents included endangered rainforest clearance in West Sumatra's Mentawai Islands and peatland destruction in Riau. In July 2025, a court in Sumatra dismissed a landmark lawsuit by haze victims against three pulpwood plantation companies, sparking protests.[25] The Indonesian government, while promoting timber plantations for renewable energy, faced pressure to revoke noncompliant licenses and pledged to enforce stricter regulations.[26]

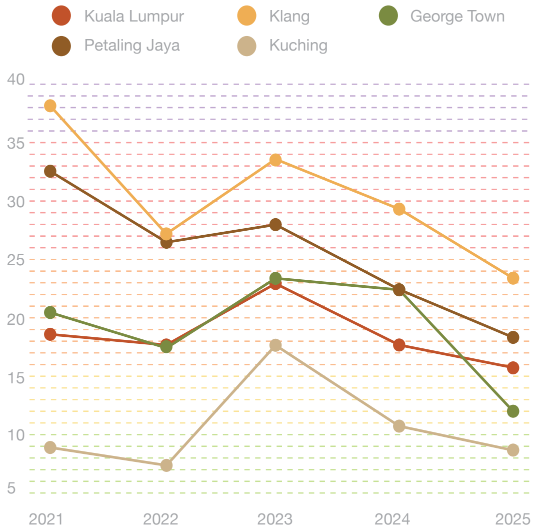


Annual hours spent at different PM2.5 pollution levels

MALAYSIA



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (µg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Kuala Lumpur	15.7	12.2	16.2	18.5	13.1	16.4	16.3	24.1	18.4	15.6	11.9	12.8	13.4	17.7
Klang	23.4	24.4	28.1	26.6	17.9	21.5	25.9	35.4	25.7	22.4	15.8	15.1	23.5	29.3
George Town	12.0	15.6	19.8	17.2	8.0	8.8	14.3	14.6	14.7	7.0	6.0	8.4	9.9	13.5
Petaling Jaya	18.3	11.3	18.3	23.6	11.8	22.5	21.0	29.0	22.6	17.8	13.2	13.6	15.7	22.4
Kuching	8.7	4.1	5.8	6.7	5.6	14.2	12.2	17.2	11.5	8.3	7.5	6.3	4.9	10.8

PROGRESS

Malaysia saw a modest decline in its annual average PM2.5 concentration, dropping from 18.3 µg/m³ in 2024 to 16 µg/m³ in 2025. This downward trend was reflected in the capital, Kuala Lumpur, which recorded an 11% decrease, from 17.7 µg/m³ to 15.7 µg/m³, over the same period. Other major urban centers, including Klang, George Town, Petaling Jaya, and Kuching, reported similar reductions. Notably, three cities achieved WHO Interim Target 4 levels, maintaining annual averages between 5 and 10 µg/m³.

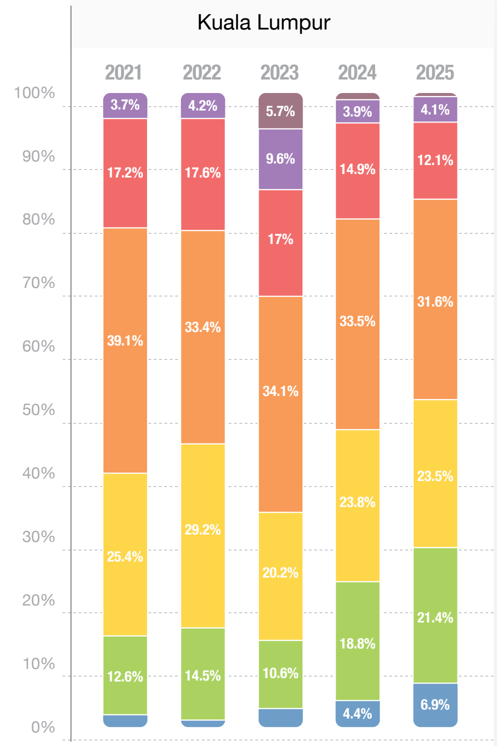
Despite these annual improvements, several cities experienced significant monthly PM2.5 spikes. In February, a regional haze in the state of Penang resulted in a 10% to 26% increase in city average PM2.5 levels relative to 2024.[27] Another seasonal PM2.5 spike occurred in July and August, driven by transboundary smoke from wildfires.[28] The city of Petaling Jaya, in the state of Selangor, saw monthly PM2.5 levels up by an average of 28% in July and August.

CHALLENGES

Malaysia's main air pollutant sources include vehicular emissions, industrial manufacturing, and power generation, while transboundary haze from neighboring country peatland and forest fires impacts air quality during the dry season.[29] Both domestic and transboundary biomass burning through agricultural residues in palm oil regions worsened seasonal smog. In 2025, AI data centers drawing from non-renewable energy emerged as a concern for environmental groups, due to their potential for vastly increasing regional carbon dioxide emissions.[30] Despite the National Clean Air Action Plan (2025–2040) and ASEAN Haze Agreement commitments, fossil fuels still supplied 90% of electricity, sustaining background emissions.[31]

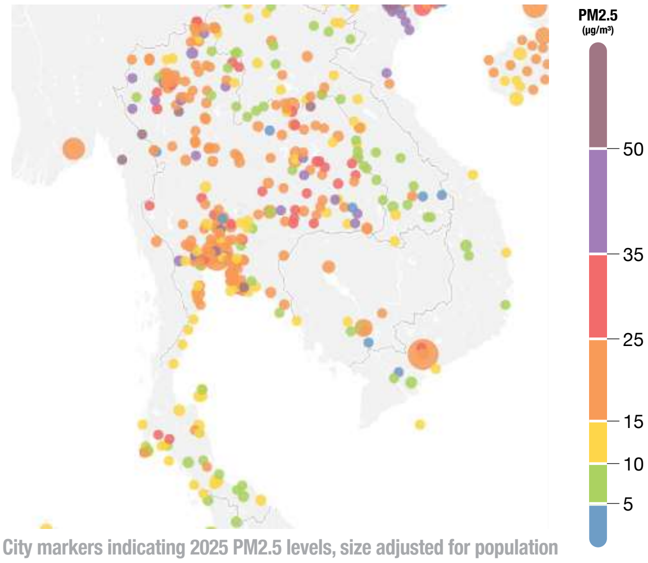
HIGHLIGHT: TRANSBOUNDARY HAZE

From July to August 2025, Malaysia faced its worst transboundary haze crisis in years, as forest and peatland fires in Sumatra and Kalimantan sent smoke across borders.[32] NASA satellites and the ASEAN Specialised Meteorological Centre (ASMC) detected scattered hotspots in Sumatra's central regions and western Kalimantan, with smoke plumes drifting into Peninsular Malaysia and Sarawak.[33] The ASEAN Haze Centre issued an Alert Level 2 on July 19 as fires intensified in neighboring Indonesia. Despite the ASEAN Agreement on Transboundary Haze Pollution, enforcement gaps and weak regional cooperation left communities exposed, with environmental activists urging a domestic Clean Air Act to hold polluters accountable.[34]

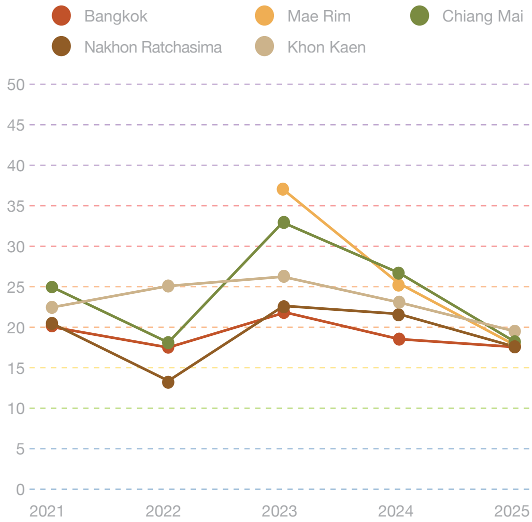


Annual hours spent at different PM2.5 pollution levels

THAILAND



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (µg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Bangkok	17.6	44.6	33.8	28.4	14.8	11.1	7.4	9.3	6.1	6.6	10.8	16.6	22.4	18.9
Mae Rim	17.8	39.1	36.6	53.0	27.8	7.1	4.9	4.0	4.2	4.3	7.3	7.8	18.7	25.2
Chiang Mai	18.2	31.7	31.6	53.5	27.3	8.2	6.8	7.5	6.4	5.8	8.8	9.7	21.1	26.4
Nakhon Ratchasima	17.6	44.7	30.2	34.9	20.9	10.7	6.5	6.7	6.9	5.4	8.5	14.3	21.6	21.5
Khon Kaen	19.5	44.9	27.6	39.4	27.7	13.4	7.9	8.9	7.4	6.1	10.8	16.8	23.5	23.1

PROGRESS

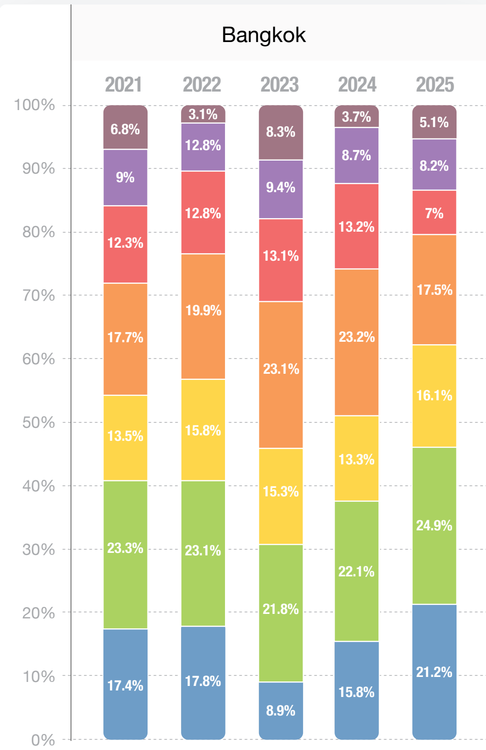
Annual average PM2.5 levels in Thailand dropped to 17.8 µg/m³ in 2025, the lowest PM2.5 level in the last five years for the Southeast Asian country. Despite the overall improvement, peak pollution months continue to pose significant public health risk. In January 2025, 20% of reporting cities across the country reported monthly PM2.5 averages exceeding 50 µg/m³, more than ten times the WHO annual PM2.5 guideline. In Bangkok, January PM2.5 levels surged by more than 23% relative to 2024, as emissions from transportation and industrial activities converged with biomass burning emissions migrating from surrounding provinces. This spike in pollution triggered emergency measures, including school closures and crop burning bans.[35] Despite elevated PM2.5 concentrations during the first three months of 2025, the capital ultimately achieved a 7% reduction in its annual average compared to the previous year, ending 2025 with an annual PM2.5 average of 17.6 µg/m³. In October and November, heavy rainfall—intensified by La Niña conditions—led to a significant decrease in fire activity and a reduction in monthly PM2.5 averages across the country.[36] Despite these late-year improvements, the overall pollution levels remained high enough that no city in Thailand successfully met the WHO annual guidelines.

CHALLENGES

Thailand's air quality challenges persisted in 2025, particularly in the northern provinces and Bangkok. Biomass burning—agricultural residues, forest fires, and sugarcane "black snow"—remained the dominant source of PM2.5 in the north and in Bangkok, alongside vehicular emissions, transboundary haze, and industrial pollution.[37,38,39] Additionally, a significant source of NOx emissions in Bangkok are both vehicles and gas power plants located near the city.[40] When crop burning smoke forced school closures in January 2025, Thai government instructed provincial authorities to enforce the existing ban on stubble crop burning and report how many people were arrested for ignoring the ban. The government also distributed 1.1 million pollution-protection masks.[41]

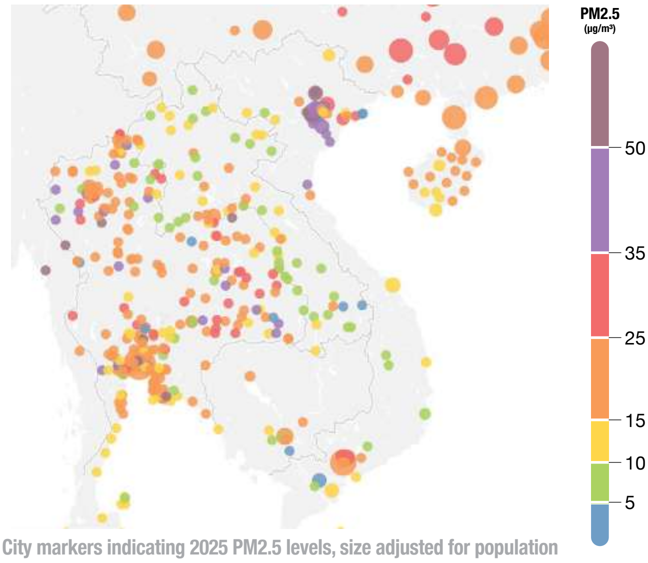
HIGHLIGHT: HOUSE UNANIMOUSLY PASSES CLEAN AIR ACT

In October 2025, Thailand's House of Representatives unanimously passed the Clean Air Act, marking a historic step toward guaranteeing citizens' right to clean air and imposing strict penalties on polluters.[42,43] The landmark legislation—developed over 20 months with input from civil society, political parties, and a special vetting panel—introduced a "polluter pays" principle, economic incentives for cleaner practices, and decentralized authority for local governments to combat air pollution. Key provisions included real-time supply-chain monitoring, transboundary pollution accountability, and fines for false reporting. The bill has advanced to the Senate, where it passed the first round of voting in October.[44] The bill still awaited a final vote as of early 2026.[45]

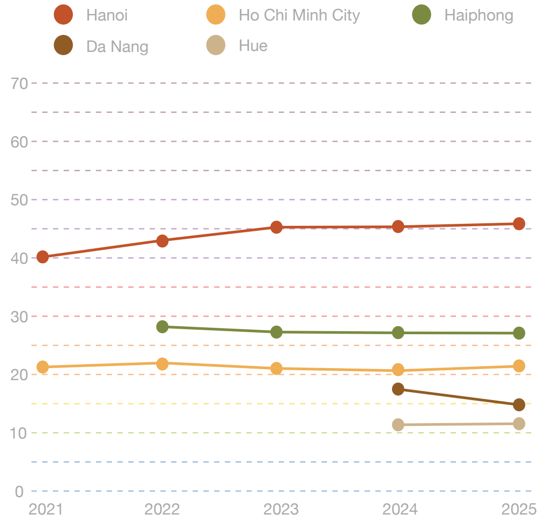


Annual hours spent at different PM2.5 pollution levels

VIETNAM



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (μg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Hanoi	45.9	96.2	59.2	58.2	57.4	29.5	23.8	25.5	20.4	23.6	31.3	44.1	81.3	45.4
Ho Chi Minh City	21.5	38.8	26.6	22.2	18.9	15.0	17.6	14.9	14.8	14.0	20.8	23.4	31.5	20.9
Haiphong	27.1	60.5	42.7	31.5	34.2	16.6	12.0	14.7	11.5	10.9	17.6	25.6	47.3	27.2
Da Nang	14.9	32.9	16.1	19.6	25.7	13.7	7.6	5.9	6.8	6.9	9.3	14.8	19.2	17.5
Hue	11.6	24.5	11.5	17.6	17.6	10.1	6.8	5.2	4.2	3.7	5.3	13.3	13.9	11.4

PROGRESS

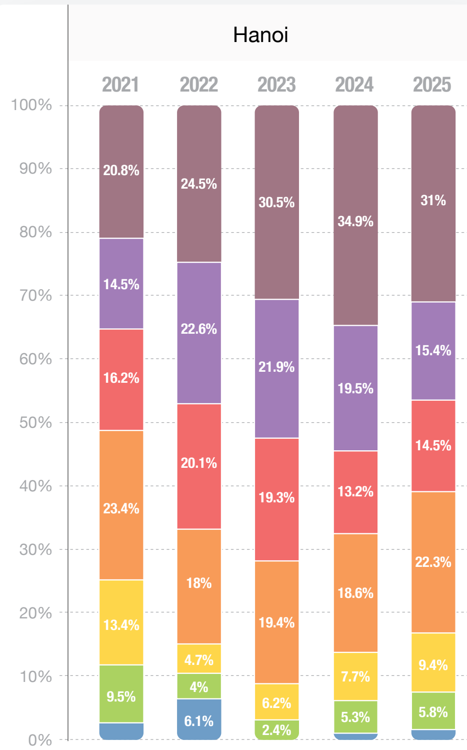
In 2025, Vietnam's air quality continued to deteriorate as the annual average PM2.5 concentrations climbed to 29.7 μg/m³, a 4% increase from 2024. The situation was most severe in Hanoi, which recorded its sixth consecutive year of rising pollution with an annual average of 45.9 μg/m³. In the capital, residents faced hazardous conditions for nearly a third of the year, with 31% of annual hours exceeding concentrations of 50 μg/m³. These spikes peaked in January, with a monthly average of 96.2 μg/m³. Meteorological factors such as cold temperature, low wind speed, and wind direction coupled with an increased demand for vehicular transportation during cold conditions contribute to elevated PM2.5 levels in January, the coldest month of the year in Hanoi.[46]

CHALLENGES

Vietnam's air quality is impacted by vehicular emissions, coal combustion, and biomass burning.[47] Construction and road dust, industrial activities, and transboundary haze exacerbated seasonal smog. Outdated motorcycles, coal-fired power plants, and rice straw burning in the Mekong Delta drove winter spikes, with indoor cooking and unvented biomass stoves adding to household exposure.[48,49] Vietnam uses more cement than any country other than China due to a construction boom; cement factories are a significant source of PM2.5 in the country. Health warnings were issued in January and March for Hanoi as poor air quality spiked, prompting school closures, and work slowdowns.[50]

HIGHLIGHT: HANOI TO BAN FOSSIL-FUEL MOTORCYCLES

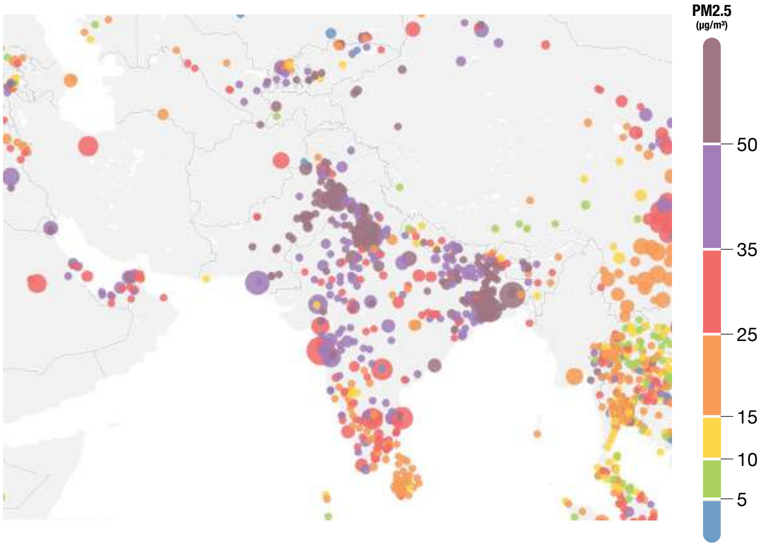
In July 2025, Vietnam announced a groundbreaking ban on fossil-fuel motorcycles in central Hanoi. The ban is set to take effect in July 2026 as part of a nationwide push to slash urban smog and combat climate change.[51] The directive, issued by Prime Minister Pham Minh Chinh, targets 7 million motorcycles (the city's main mode of transport, compared to just over 1 million cars) within the main ring road. A second phase set for 2028 will expand the ban and restrict some gasoline cars. The plan also includes stricter emission standards (Euro 4) for cars in Hanoi and Ho Chi Minh City by 2027, low-emission zones, an accelerated plan to shift to electric vehicles (EVs), and digital pollution monitoring.[52]



Annual hours spent at different PM2.5 pollution levels

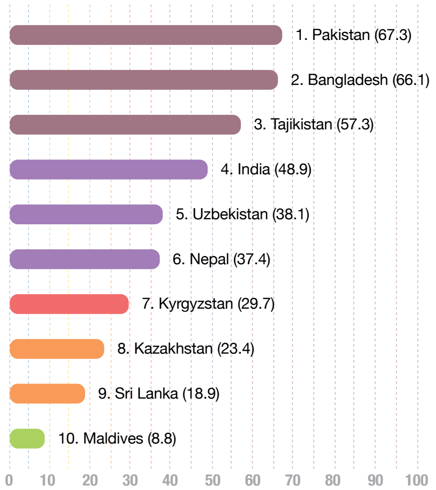
CENTRAL & SOUTH ASIA

Bangladesh | India | Kazakhstan | Kyrgyzstan | Maldives | Nepal | Pakistan | Sri Lanka | Tajikistan | Uzbekistan



City markers indicating 2025 PM2.5 levels, size adjusted for population

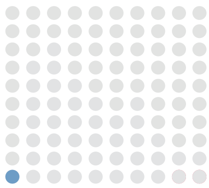
Country/Region Ranking

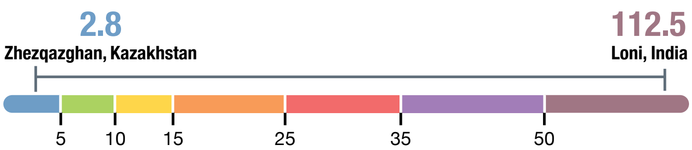


2025 PM2.5 average (µg/m³)

1%

Regional cities that met the WHO annual PM2.5 guideline in 2025





Range of 2025 average PM2.5 (µg/m³) across regional cities

Most Polluted Regional Cities

Rank	City	2025
1	Loni, India	112.5
2	Byrnihat, India	101.1
3	Delhi, India	99.6
4	Faisalabad, Pakistan	98.8
5	Rahim Yar Khan, Pakistan	92.6
6	Ghaziabad, India	89.2
7	Lahore, Pakistan	88.9
8	Sukkur, Pakistan	88.6
9	Pattoki, Pakistan	86.7
10	Mullanpur Dhaka, India	86.2
11	Lodhran, Pakistan	85.3
12	Peshawar, Pakistan	81.7
13	Noida, India	80.5
14	Sialkot, Pakistan	78.6
15	Greater Noida, India	77.2

Least Polluted Regional Cities

Rank	City	2025
1	Zhezqazghan, Kazakhstan	2.8
2	Kokshetau, Kazakhstan	3.0
3	Hithadhoo, Maldives	8.4
4	Mahiyanganaya, Sri Lanka	8.4
5	Rudnyy, Kazakhstan	9.8
6	Pavlodar, Kazakhstan	10.4
7	Fuvahmulah, Maldives	11.3
8	Sidzhak, Uzbekistan	11.8
9	Fonadhoo, Maldives	13.4
10	Kudahuvadhoo, Maldives	13.6
11	Kök-Jar, Kyrgyzstan	13.7
12	Bandarawela, Sri Lanka	14.8
13	Tirunelveli, India	15.1
14	Deniyaya, Sri Lanka	15.1
15	Viligili, Maldives	16.2

SUMMARY

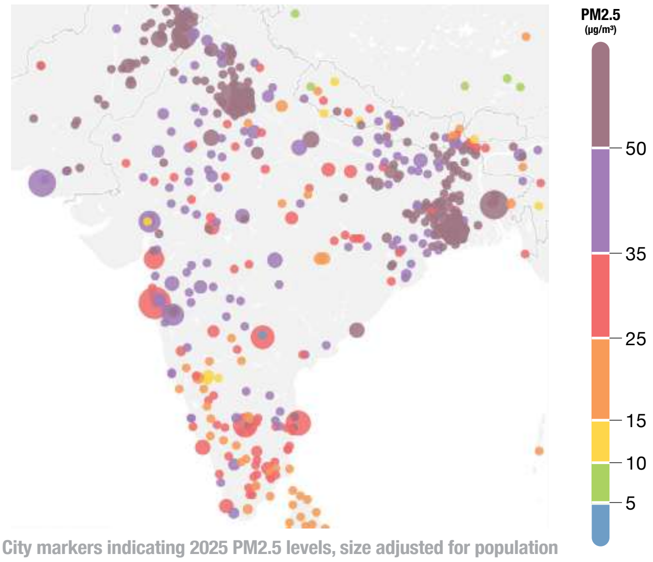
Central and South Asia continue to experience the highest annual average PM2.5 concentrations globally, a trend underscored by the fact that 17 of the world's 20 most polluted cities in 2025 were located within this region. Of the 358 cities across 10 regional countries included in the 2025 Report, 71 cities reported annual average concentrations exceeding 50 µg/m³, more than ten times the current WHO guideline. While India maintains the region's most robust monitoring network—followed by Pakistan and Kazakhstan—the data reveals a consistent regional pattern of elevated concentrations. The severity of the air quality in this region is further evidenced at the national level; Bangladesh, Pakistan, and Tajikistan all recorded annual country-wide averages above the 50 µg/m³ threshold. This persistent pollution is fueled by a combination of industrial and vehicular emissions, brick kilns, construction dust, and seasonal crop burning. Major capital cities such as Dushanbe, Dhaka, and Delhi faced particularly extreme conditions in 2025, with each city recording at least two months where concentrations surged above 100 µg/m³. Given the high population density in these urban centers, these sustained pollution levels represent a constant and significant threat to public health.

MONITORING STATUS

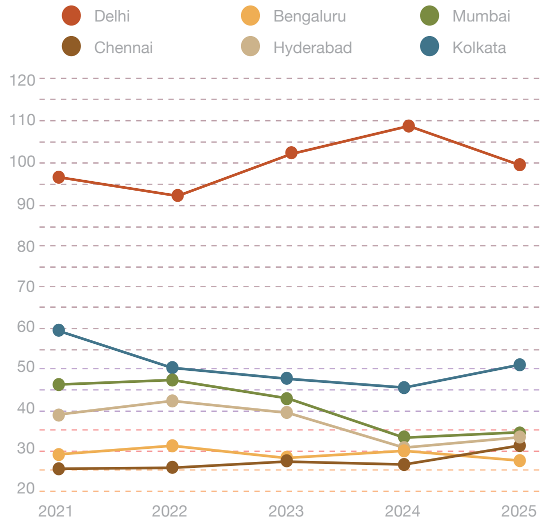
Analysis of the air quality stations compiled for this Report shows that government-operated monitors account for 48% of the total network in Central and South Asia. This highlights the heavy reliance on non-government operated sensors to bridge significant infrastructure gaps. A key development in closing this gap occurred in September 2025, when the Punjab Environment Protection Agency (EPA) launched a real-time data dashboard providing public access to air quality information covering 10 major cities.[53]

However, coverage remains uneven; even in India which boasts the region's most extensive official network, significant data gaps persist in rural areas. Expanding both government operated and community-led monitoring networks is vital for a comprehensive understanding of regional air quality.

INDIA



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (µg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Delhi	99.6	174.9	103.4	71.6	74.3	65.6	47.6	28.0	32.2	34.6	112.8	228.4	221.8	108.3
Bengaluru	27.5	41.9	36.8	33.5	27.4	18.6	20.4	17.9	17.3	16.8	20.9	35.0	43.8	30.0
Mumbai	34.2	59.7	51.6	39.4	24.7	18.8	17.1	15.6	13.8	16.2	39.2	59.2	55.7	33.7
Chennai	31.3	51.2	36.7	23.3	20.5	24.1	21.5	18.4	20.3	22.1	29.7	44.5	63.2	26.0
Hyderabad	33.3	43.7	38.8	35.8	32.6	26.3	24.9	22.7	25.6	26.8	33.4	44.8	45.0	30.6
Kolkata	51.0	79.9	56.6	44.9	28.9	25.9	25.4	21.0	20.3	25.6	56.0	107.5	120.0	45.6

PROGRESS

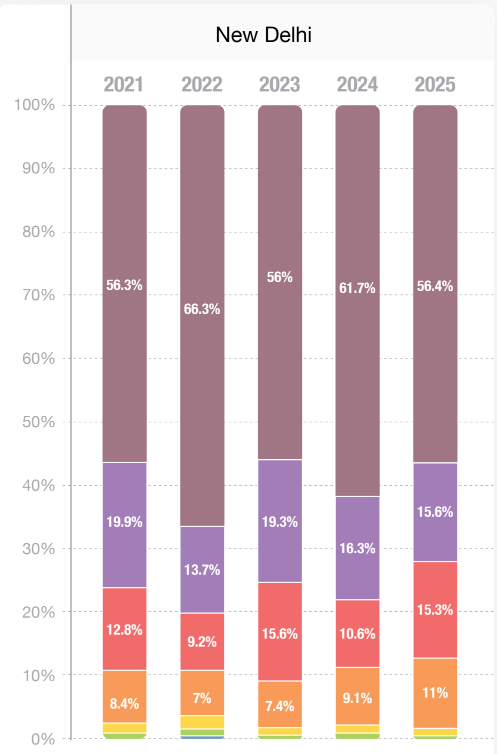
In 2025, India's national average PM2.5 levels saw a modest 3% decline, dropping from 50.6 µg/m³ in 2024 to 48.9 µg/m³. While Delhi's annual average concentration fell by 8%, the city still grappled with severe monthly spikes driven by seasonal smog and dust storms. Specifically, a massive dust storm in April caused Delhi's PM2.5 levels to surge by 15% that month.[54] Winter conditions—fueled by a combination of crop burning, temperature inversions, industrial emissions, and construction—continued to plague the Indo-Gangetic Plain. This was most evident in December, when PM2.5 averages spiked by 44% in Delhi and by an average of 62% in neighboring cities across Uttar Pradesh. Among these, the city of Loni in the Ghaziabad district emerged as India's most polluted city in 2025; its annual average concentration climbed nearly 23% to 112.5 µg/m³, following extreme pollution events in March, April, and December.

CHALLENGES

India's air quality challenges persisted in 2025, with vehicular emissions, industrial emissions, crop residue burning, and construction dust continuing as dominant sources of pollution.[55] Despite the National Clean Air Programme's goal to reduce pollution by 40% by 2025-2026, 64% of funding has been dedicated to road dust reduction[56]; only 15% of funding has been used to reduce biomass burning, 13% for vehicle emissions, and only 1% to counter industrial pollution. Only PM10 concentrations have been targeted, rather than the more harmful PM2.5. Weak enforcement of vehicular and industrial emission norms, combined with relaxed sulfur rules for coal plants, likely impacted air quality.[57,58]

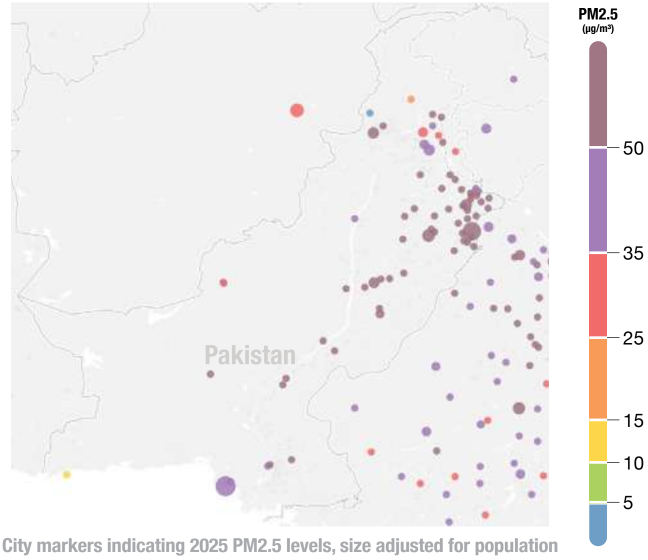
HIGHLIGHT: NEW DELHI PROTESTS

In November 2025, New Delhi's air quality crisis sparked rare public protests as the city's PM2.5 levels surged into the hazardous range and the daily average concentration peaked near 460 µg/m³.[59] Hundreds of protesters gathered at India Gate, wearing masks and holding signs like "I miss breathing," demanded urgent government action.[60] Fueled by seasonal crop burning, vehicular emissions, and stagnant winter air, the poor air quality corresponded to a rise in hospital patients dealing with asthma, cardiac issues, and difficulty breathing. Authorities responded by closing schools, encouraging online work and classes, banning construction, and restricting diesel generators, but did not immediately respond to demands for long-term emission cuts.

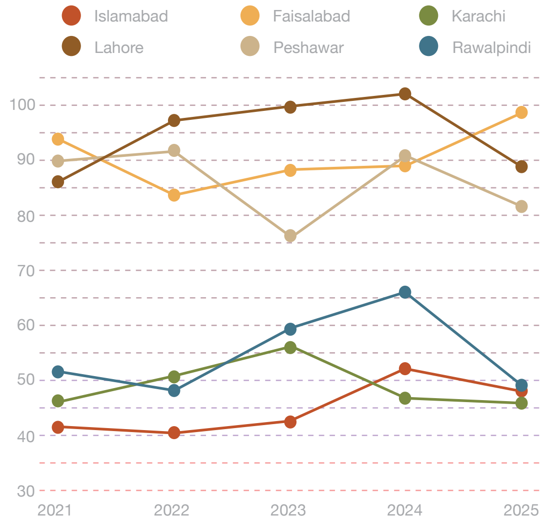


Annual hours spent at different PM2.5 pollution levels

PAKISTAN



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (µg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Islamabad	48.1	75.9	48.4	22.5	30.9	28.5	33.5	25.3	23.3	26.1	45.8	94.6	122.4	52.4
Faisalabad	98.8	133.3	103.4	62.0	65.7	60.3	54.9	43.7	38.8	43.9	137.2	220.2	226.5	88.8
Karachi	45.9	87.3	54.2	35.7	34.2	29.9	31.7	22.2	21.3	22.5	51.3	75.5	85.4	47.1
Lahore	88.9	139.0	99.5	63.2	59.4	56.5	44.7	46.0	35.8	44.6	123.4	183.9	171.0	102.1
Peshawar	81.7	122.8	69.2	45.8	55.7	53.5	42.6	36.4	33.7	48.0	99.1	166.4	204.9	91.0
Rawalpindi	49.1	95.1	54.2	25.3	25.4	23.4	28.4	22.2	21.4	26.0	46.5	97.2	124.1	65.8

PROGRESS

Despite a 6.6 µg/m³ reduction in PM2.5 levels, Pakistan topped the global list as the most polluted country in 2025, with an annual average concentration of 67.3 µg/m³. The human toll is significant; an Ipsos survey found that 70% of Pakistanis report experiencing smog-related health issues.[61] The national crisis is driven by extreme local hotspots, as Pakistan was home to four of the top ten most polluted cities in the world in 2025. Reporting the highest levels nationwide, Faisalabad reached an annual average of 98.8 µg/m³, marking an 11% increase. Across the country, 13 cities recorded annual average PM2.5 concentrations exceeding 50 µg/m³, or more than ten times the WHO annual average PM2.5 guideline.

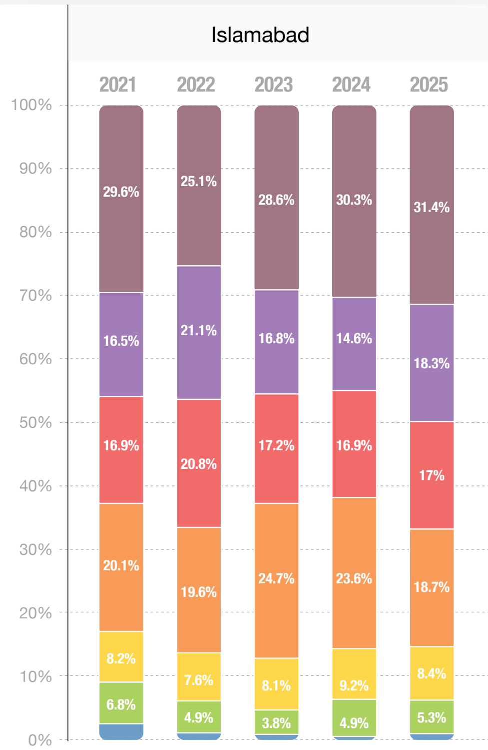
PM2.5 levels spiked across much of Pakistan in April and May, driven by extensive dust storms that pushed air pollution well above historical averages for this period.[62,63] This trend was mirrored in Karachi during November, where levels rose nearly 57% over 2024 figures. These surges were exacerbated by stagnant meteorological conditions that prevented the dispersal of construction dust, industrial pollutants, and vehicular exhaust.

CHALLENGES

Pakistan's air quality crisis, claiming nearly 22,000 lives annually, continued in 2025.[64] While urban air is perpetually degraded by industrial emissions, vehicle exhaust, brick kilns, and construction dust, winter smog brings a seasonal peak as stubble burning in Punjab's wheat-rice belt engulfs Lahore and surrounding cities.[65] Despite accounting for at least one-fifth of the nation's pollution, stubble burning persists; weak enforcement and a lack of viable alternatives remain significant barriers to reform.[66]

HIGHLIGHT: BRICK KILNS

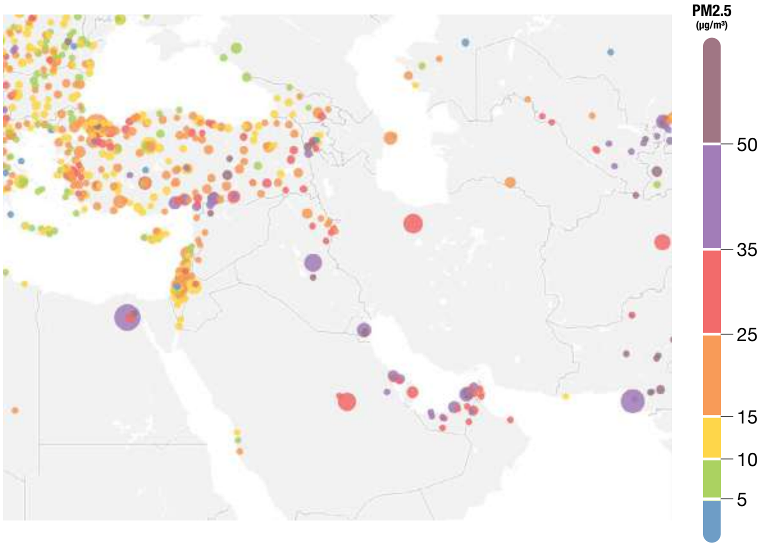
Pakistan's 20,000 brick kilns—fueled by low-grade coal, tires, and sawdust—emit a mix of PM2.5, sulfur dioxide, and nitrogen oxides, making them a leading source of urban smog.[67] Unregulated brick kilns are common across South Asia and Pakistan, where 50% of brick kilns are located in Punjab Province alone. To better control the nation's brick kiln-sourced air pollution, the Pakistan Environmental Protection Agency (Pak-EPA) and other government agencies set an October 20, 2025 deadline for kilns to adopt cleaner "zigzag" technology or face demolition.[68] Brick kilns that adopt zigzag stacking require less coal, while coal is burnt more efficiently, emitting less black smoke.[69]



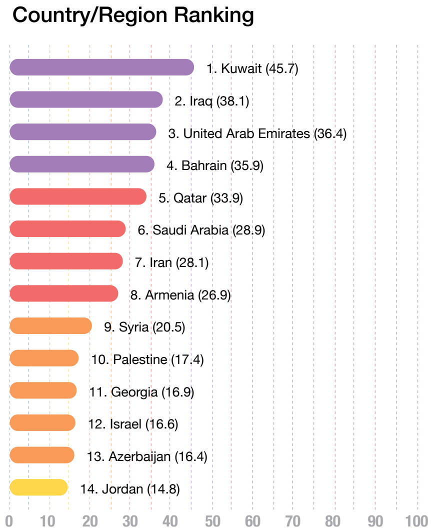
Annual hours spent at different PM2.5 pollution levels

WEST ASIA

Armenia | Azerbaijan | Bahrain | Georgia | Iran | Iraq | Israel | Jordan | Kuwait | Palestine | Qatar | Saudi Arabia | Syria | United Arab Emirates



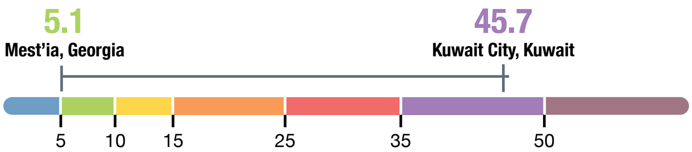
City markers indicating 2025 PM2.5 levels, size adjusted for population



2025 PM2.5 average (µg/m³)

0%

Regional cities that met the WHO annual PM2.5 guideline in 2025



Range of 2025 average PM2.5 (µg/m³) across regional cities

Most Polluted Regional Cities

Rank	City	2025
1	Kuwait City, Kuwait	45.7
2	Baghdad, Iraq	44.3
3	Ruwais, UAE	43.3
4	Ras Al-Khaimah, UAE	41.8
5	Habshan, UAE	39.9
6	Ajman, UAE	38.9
7	Abu Dhabi, UAE	38.6
8	Gayathi, UAE	36.1
9	Manama, Bahrain	35.9
10	Dubai, UAE	35.8
11	Zakher, UAE	35.5
12	Dhahran, Saudi Arabia	34.0
13	Doha, Qatar	33.9
14	Al Quo'a, UAE	33.7
15	Sweihan, UAE	32.4

Least Polluted Regional Cities

Rank	City	2025
1	Mest'ia, Georgia	5.1
2	Nehalim, Israel	11.1
3	'En Boqeq, Israel	11.9
4	Kutaisi, Georgia	12.3
5	Karmei Yosef, Israel	13.1
6	Mitzpe Netofa, Israel	13.4
7	Batumi, Georgia	13.6
8	Timorim, Israel	13.6
9	Zikhron Ya'akov, Israel	13.8
10	Mi'ilya, Israel	13.8
11	Jerusalem, Israel	13.9
12	Jaffa, Israel	14.1
13	Ketura, Israel	14.3
14	Sderot, Israel	14.6
15	Netanya, Israel	14.8

SUMMARY

In 2025, the West Asia region was represented by 103 cities across 14 countries and territories, reflecting a diverse and shifting air quality landscape. At the city level, trends were notably mixed: 54 cities saw an increase in annual average PM2.5 concentrations, while 40 reported improvements; one remained stable, and eight new cities were added. National trends followed a similar pattern of fluctuation, with seven countries experiencing rising PM2.5 levels and four seeing a decline. Additionally, the regional dataset expanded to include Syria, Jordan, and Iran.

Several countries experienced significant year-over-year shifts, most notably Kuwait. Its national annual average PM2.5 concentration rose by 51%, rising from 30.2 to 45.7 µg/m³, resulting in the highest annual PM2.5 average in the region. In contrast, Jordan entered the Report with the region's lowest national average at 14.8 µg/m³. Despite some improvements elsewhere, air pollution remains a concern for the area, as Kuwait, Iraq, the United Arab Emirates, and Bahrain all reported annual concentrations exceeding 35 µg/m³. These elevated levels were frequently driven by natural phenomena rather than rather than transportation emissions, construction, and industrial sources.Significant spikes in regional PM2.5 were attributed to intense dust storms, with cities across West Asia reporting peak concentrations during major events in April, May, and November.

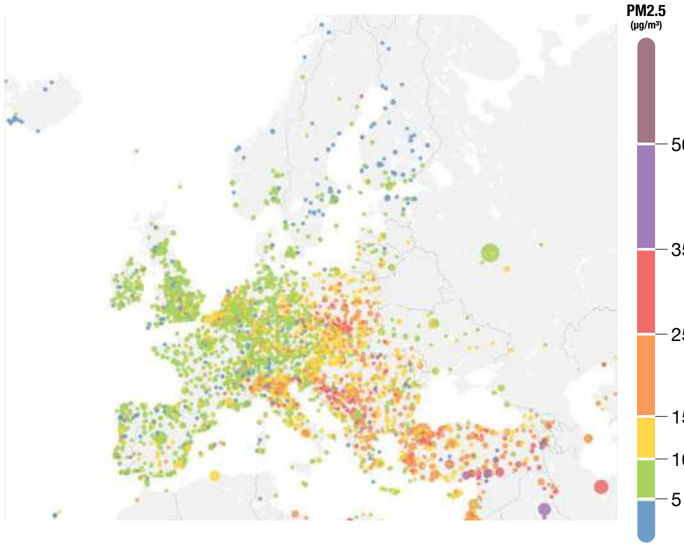
MONITORING STATUS

West Asia's monitoring network continues to expand, recently adding eight new cities across Armenia, Israel, Palestine, and Syria. While none of these newly included areas met the stringent WHO annual guideline of 5 µg/m³, four of the eight recorded relatively moderate concentrations of 15 µg/m³ or lower.

Despite this growth, the region's monitoring infrastructure remains heavily reliant on low-cost sensors, with nearly 70% of all air quality data provided by non-governmental sources. Currently, West Asia accounts for only 1% of the total stations included in this year's Report—the smallest representation of any region globally. Expanding the availability of high-quality, publicly accessible data is essential for a more comprehensive and transparent understanding of the region's air quality challenges.

EUROPE

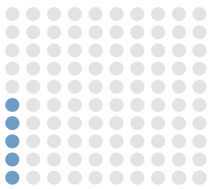
Albania | Andorra | Austria | Belgium | Bosnia and Herzegovina | Bulgaria | Croatia | Cyprus | Czech Republic | Denmark | Estonia | Finland | France | Germany | Greece | Hungary | Iceland | Ireland | Italy | Kosovo | Latvia | Lithuania | Luxembourg | Malta | Moldova | Montenegro | Netherlands | North Macedonia | Norway | Poland | Portugal | Romania | Russia | San Marino | Serbia | Slovakia | Slovenia | Spain | Sweden | Switzerland | Turkey | Ukraine | United Kingdom

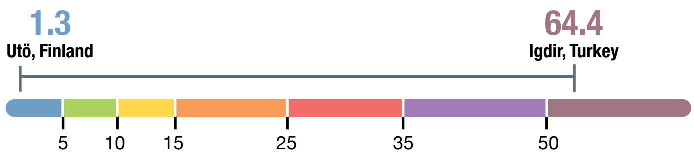


City markers indicating 2025 PM2.5 levels, size adjusted for population

5%

Regional cities which met the WHO annual PM2.5 guideline in 2025





Range of 2025 average PM2.5 (µg/m³) across regional cities

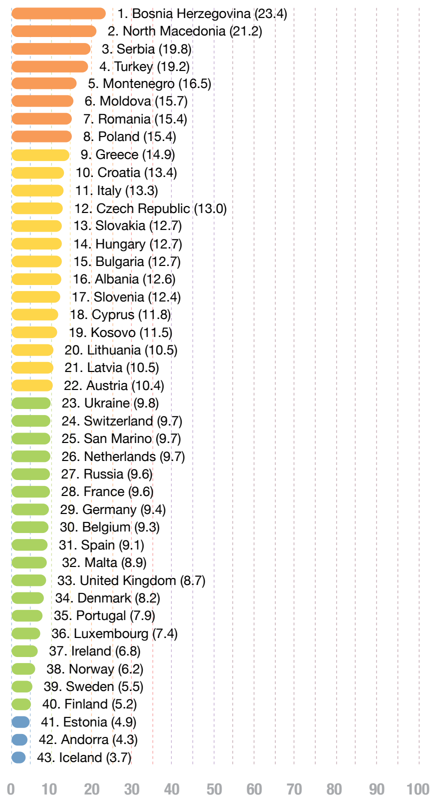
Most Polluted Regional Cities

Rank	City	2025
1	Igdir, Turkey	64.4
2	Buca, Turkey	51.5
3	Novi Pazar, Serbia	34.1
4	Gödekli, Turkey	33.7
5	Prijedor, Bosnia Herzegovina	31.5
6	Konya, Turkey	31.1
7	Gorazde, Bosnia Herzegovina	30.7
8	Duzce, Turkey	30.5
9	Gracanica, Bosnia Herzegovina	29.2
10	Cacak, Serbia	29.0
11	Vranje, Serbia	28.8
12	Valjevo, Serbia	28.5
13	Sarajevo, Bosnia Herzegovina	28.4
14	Banja Luka, Bosnia Herzegovina	28.1
15	Strumica, North Macedonia	27.3

Least Polluted Regional Cities

Rank	City	2025
1	Utö, Finland	1.3
2	Muonio, Finland	1.4
3	Kittilä, Finland	1.6
4	Sandgerði, Iceland	2.2
5	Ranua, Finland	2.3
6	Bredkälen, Sweden	2.4
7	Garðabær, Iceland	2.6
8	Faro, Portugal	2.7
9	Alftanes, Iceland	2.9
10	Nivala, Finland	3.0
11	Siilinjärvi, Finland	3.1
12	Salão, Portugal	3.1
13	Heald Green, United Kingdom	3.1
14	Reykjavík, Iceland	3.4
15	Bodø, Norway	3.4

Country/Region Ranking



2025 PM2.5 annual average (µg/m³)

SUMMARY

Europe was represented by 2,302 cities across 43 countries in 2025, making it one of the most comprehensively monitored regions in the world. A total of 1,182 cities recorded increases in annual average PM2.5 concentrations, while 886 cities reported decreases, 72 cities remained unchanged, and 163 new cities were added in 2025. In total, 104 cities recorded annual average concentrations below the WHO PM2.5 annual average guideline of 5 µg/m³. Finland led all European countries with 25 cities below the guideline, followed by Sweden with 15 and Spain with 12.

At the national level, trends were evenly split. Twenty-three countries recorded increases in annual average PM2.5 concentrations, while 18 countries reported decreases, and one country was newly included in the regional dataset. Switzerland and Greece recorded the largest relative increases. Switzerland rose from 7.3 µg/m³ to 9.7 µg/m³, and Greece increased from 11.5 µg/m³ to 14.9 µg/m³, with both countries posting increases of more than 30%. In contrast, Malta recorded the largest decrease, with its national annual average falling from 11.7 µg/m³ to 8.9 µg/m³, a reduction of 24%.

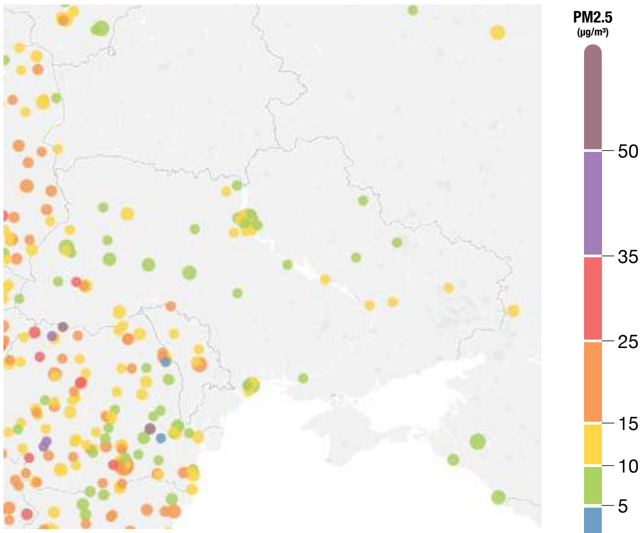
Three countries, Estonia, Iceland, and Andorra, reported national annual average PM2.5 concentrations below the WHO guideline level. However, eight countries, Bosnia and Herzegovina, North Macedonia, Serbia, Turkey, Moldova, Romania, Montenegro, and Poland, reported concentrations above 15 µg/m³, placing them in the highest relative pollution tier in the region.

MONITORING STATUS

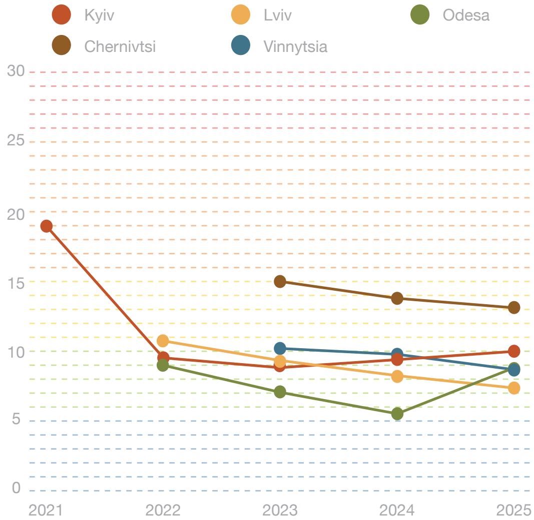
A total of 163 new cities were added to the Report in Europe in 2025. Among these, nine cities reported annual PM2.5 concentrations above 20 µg/m³, indicating relatively high pollution levels for some areas of the region. Five of the newly added cities recorded PM2.5 concentrations below 5 µg/m³, including two in Sweden and one each in Finland, Norway, and the United Kingdom.

Germany contributed the largest number of new cities with 31, followed by the United Kingdom with 22 and each of the Netherlands, Serbia, and Spain with 12. In 2025, 62% of stations producing data for the qualifying cities in this region were government-operated, highlighting Europe's robust public monitoring network, which is further supported by non-government stations.

UKRAINE



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (μg/m^3) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Kyiv	10.0	13.7	21.3	17.5	6.6	5.5	6.2	6.8	6.3	6.6	7.3	11.5	11.7	9.4
Lviv	7.4	10.1	16.8	14.0	6.2	3.3	3.9	4.0	4.4	4.4	5.2	8.3	9.2	8.1
Odesa	8.8	11.5	13.5	11.7	5.4	4.6	5.0	7.0	5.9	5.2	8.6	13.2	14.0	5.5
Chernivtsi	13.1	21.2	24.4	17.2	8.4	5.4	7.1	7.1	8.6	8.7	12.8	18.4	19.0	13.8
Vinnytsia	8.7	11.2	16.2	14.5	6.5	4.1	5.0	6.2	6.4	6.8	6.9	10.1	10.8	9.7

PROGRESS

Ukraine's national annual average PM2.5 concentration increased slightly from 9.2 μg/m^3 in 2024 to 9.8 μg/m^3 in 2025. This modest rise was driven primarily by increases in several major cities, including Kyiv and Odesa, while other key cities such as Lviv, Chernivtsi, and Vinnytsia recorded decreases. Odesa showed the most pronounced change, with its annual average concentration rising by 60%, from 5.5 μg/m^3 in 2024 to 8.8 μg/m^3 in 2025. PM2.5 levels doubled in December, relative to the same period in 2024, in Odesa due to the city's reliance on alternative cooking and heating fuel sources after Russian aerial attacks on the regions' energy infrastructure left the area without reliable power.[70]

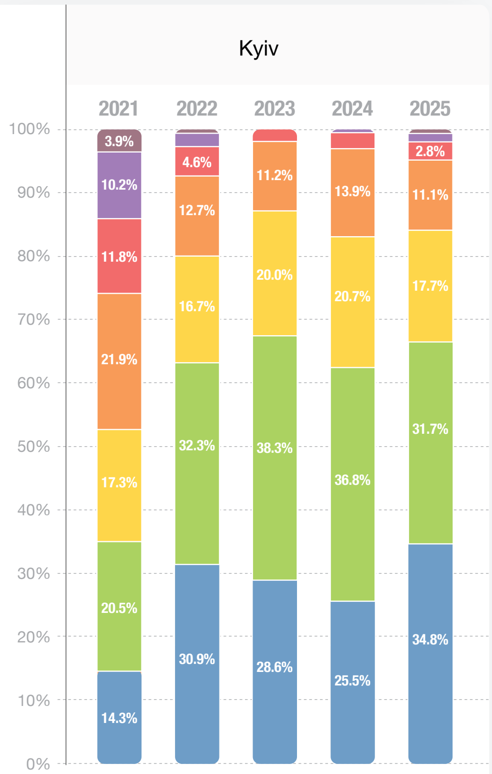
Consistent with trends reported in 2024, most smaller cities across the country experienced declines in annual average PM2.5 concentrations, while only a handful of larger population centers recorded increases. Overall, just eight cities reported increases in annual concentrations, compared with 25 cities that saw decreases, and the addition of two new cities in 2025. The data for cities included in this Report are drawn primarily from government-operated monitoring stations, supplemented by a smaller number of non-government stations. Seasonal patterns remained evident, with winter months accounting for higher monthly PM2.5 averages across much of the country; however many cities recorded multiple, non-winter months below the WHO guideline threshold.

CHALLENGES

In 2025, Ukraine's air quality continued to be severely compromised by the ongoing military conflict. Russian missile and drone strikes destroyed civilian and energy infrastructure, triggering structural fires that released toxic PM2.5, CO, O_3, and NO_2 into urban air. In 2025[71], Russia launched more than 54,000 long-range drones and over 1,900 missiles against Ukraine. Climate change and war have increased wildfires and deforestation, especially along the frontlines.[72] Ukrainian firefighting efforts have been complicated by Russian drones targeting firefighters.[73]

HIGHLIGHT: WARTIME AIR POLLUTION SURGES IN UKRAINE

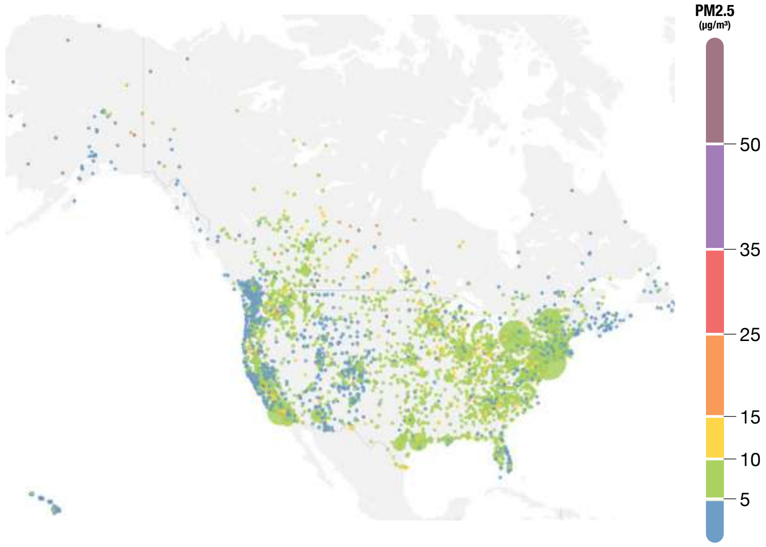
The Ministry of Environmental Protection and Natural Resources of Ukraine reported that Russian drone attacks in Kyiv dispersed over 1,900 tons of harmful substances into the city between June 6 and 10.[74] During June and July, Kyiv experienced smog and smoke following Russian shelling and the resulting fires in the city.[75] These short-lived but extreme surges create acute health problems, putting people with respiratory and cardiovascular conditions at risk. Frontline cities like Kharkiv have become pollution hotspots, where artillery and industrial fires released a toxic mix of heavy metals, sulfur dioxide, and nitrogen oxides, distinct from typical urban pollution.[76] The Odesa City Council noted that due to 21 emergency fire incidents in early 2025, a "significant amount of pollutants" had been released into the city.[77] December attacks on Odesa's power grid blacked out the city for several days, forcing residents to seek alternative fuel sources for heating and cooking.[78,79]



Annual hours spent at different PM2.5 pollution levels

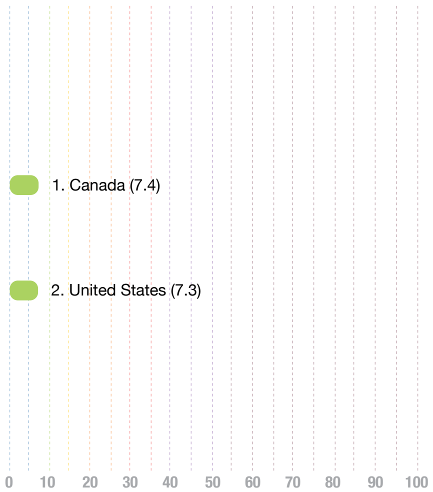
NORTHERN AMERICA

Canada | United States



City markers indicating 2025 PM2.5 levels, size adjusted for population

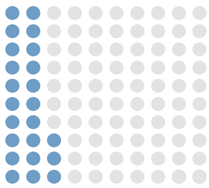
Country/Region Ranking

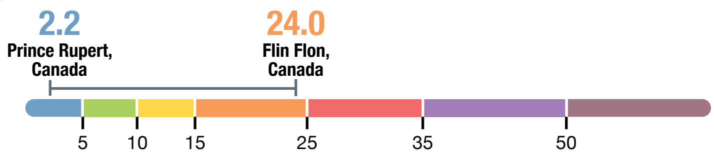


2025 PM2.5 average (µg/m³)

23%

Regional cities that met the WHO annual PM2.5 guideline in 2025





Range of 2025 average PM2.5 (µg/m³) across regional cities

Most Polluted Regional Cities*

Rank	City	2025
1	Flin Flon, Canada	24.0
2	Cudahy, CA, USA	14.3
3	East Los Angeles, CA, USA	14.0
4	Huntington Park, CA, USA	13.8
5	Bloomington, CA, USA	13.7
6	Florence-Graham, CA, USA	13.7
7	San Pasqual, CA, USA	13.1
8	Gimli, Canada	12.8
9	Sunland Park, NM, USA	12.8
10	Fort McMurray, Canada	12.7
11	Burbank, CA, USA	12.7
12	Ontario, CA, USA	12.7
13	San Gabriel, CA, USA	12.6
14	Estevan, Canada	12.4
15	Maywood, CA, USA	12.3

Least Polluted Regional Cities*

Rank	City	2025
1	Prince Rupert, Canada	2.2
2	Bedford, Canada	2.2
3	Makawao, HI, USA	2.3
4	Homer, AK, USA	2.4
5	Skagway County, AK, USA	2.4
6	Seaside, CA, USA	2.4
7	Wahiawa, HI, USA	2.4
8	Sitka, AK, USA	2.7
9	Pleasure Point, CA, USA	2.7
10	Lander, WY, USA	2.7
11	Worland, WY, USA	2.7
12	Stanwood, WA, USA	2.8
13	Ladysmith, Canada	2.8
14	Powell River, Canada	2.8
15	Astoria, OR, USA	2.8

**For the region of Northern America, only cities with populations >5,000 are ranked here*

SUMMARY

In 2025, annual average PM2.5 concentrations increased across Northern America, driven primarily by intense wildfire activity. Canada experienced a significant impact, reclaiming the highest regional pollution rank with a national average of 7.4 µg/m³—a 10% increase over 2024. These elevations were largely attributable to a wildfire season that began prematurely in April and May, eventually becoming the second most severe on record.[80] The United States recorded a more moderate rise of 3%, reaching an annual average of 7.3 µg/m³.

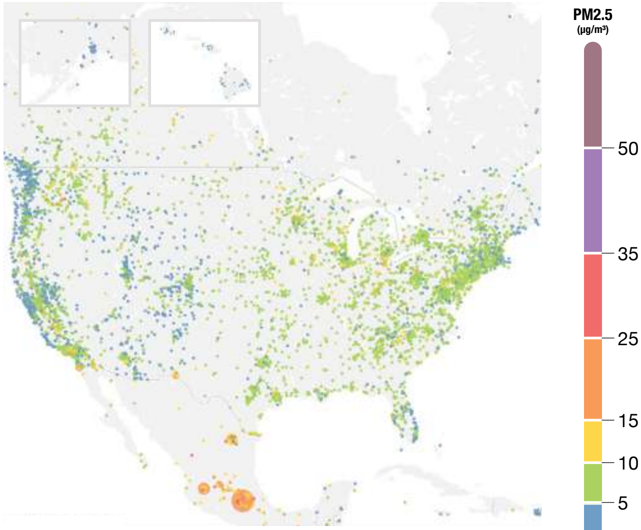
The environmental consequences were acute in Flin Flon, Manitoba, the region's most polluted city in 2025. In late May, residents evacuated as fires originating in Saskatchewan crossed provincial borders; by June, Manitoba's PM2.5 levels were nearly eight times higher than in June 2024.[81] Transboundary smoke also degraded air quality in U.S. states like Michigan and Minnesota, where levels nearly doubled in July relative to the previous year.

Consequently, the proportion of regional cities meeting the WHO annual PM2.5 guideline fell from 29% in 2024 to 23% in 2025. Despite this historic wildfire activity, nearly one-third of regional cities demonstrated improved PM2.5 levels, suggesting that localized emission reductions or meteorological factors mitigated the impact in certain areas.

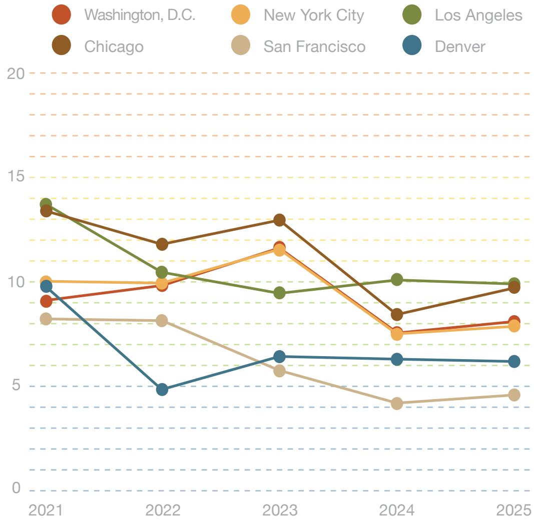
MONITORING STATUS

Northern America maintains an exceptionally robust air quality monitoring network, accounting for 54% of the global monitoring stations and 45% of the total cities featured in the Report. In 2025, the number of monitored cities in the region expanded to 4,275. This extensive infrastructure is increasingly defined by the adoption of emerging technology; notably, low-cost sensors contributed 90% of the region's total data. The reliance on this hardware is even more pronounced at the municipal level, as 68% of the region's cities relied exclusively on low-cost sensors for their air quality reporting. While these sensors have vastly increased the geographic reach of the network, they now represent the primary backbone of Northern America air quality data collection, providing the critical infrastructure required to monitor rapidly changing conditions such as wildfire smoke.

UNITED STATES



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (µg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Washington, D.C.	8.1	9.9	8.4	6.6	6.6	5.6	10.7	10.9	8.0	7.2	4.3	8.4	10.2	7.6
New York City	7.9	9.3	8.1	6.5	6.3	6.6	11.6	10.4	9.2	6.5	4.3	6.8	9.3	7.5
Los Angeles	9.9	11.5	8.6	6.2	8.3	9.2	11.9	10.0	11.4	8.7	9.0	11.6	12.7	10.1
Chicago	9.7	7.9	9.8	6.8	6.9	6.6	16.4	14.6	12.6	9.0	5.6	7.8	12.2	8.4
San Francisco	4.6	6.6	3.0	2.9	3.5	4.0	4.0	2.2	3.4	4.1	3.9	7.0	10.4	4.2
Denver	6.2	6.5	8.6	4.8	5.3	4.7	6.4	7.5	8.3	7.0	4.9	5.8	5.1	6.3

PROGRESS

In 2025, the United States saw a 3% increase in annual average PM2.5 levels, reaching a concentration of 7.3 µg/m³. This rise was driven largely by extreme weather and fire events across several regions. During the summer, smoke from Canadian wildfires heavily impacted the Great Lakes, raising average PM2.5 levels in Minnesota, Wisconsin, and Michigan cities by 8 µg/m³ throughout June and July. By September, wildfire activity shifted to Washington state, releasing over 1.5 megatonnes of carbon emissions and pushing monthly averages above 50 µg/m³ in parts of central Washington.[82]

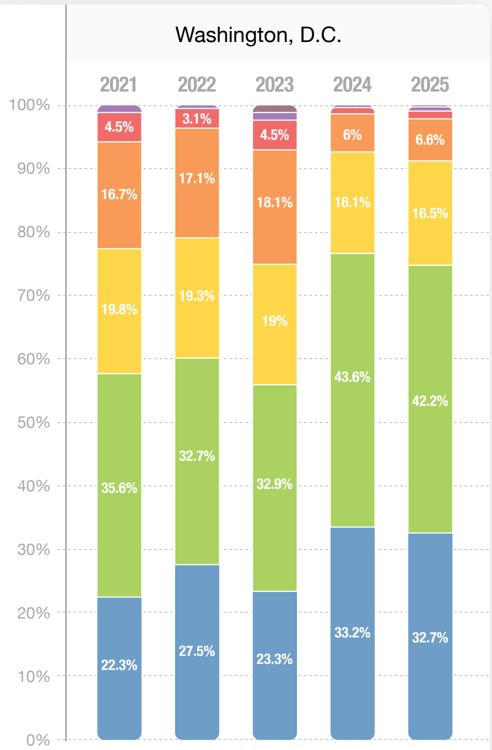
Texas experienced mixed trends in 2025; Austin, Fort Worth, and Houston saw concentrations drop by an average of 9% while historic dust storms in El Paso triggered a 46% increase in PM2.5 levels. On the West Coast, massive wildland-urban interface fires in Los Angeles exacerbated existing pollution in the city's Southeast region, including Cudahy, East Los Angeles, Huntington Park, and Florence-Graham, cementing it as the most PM2.5-polluted area in the nation for 2025. Conversely, despite slight annual increases, San Francisco and Seattle remained bright spots, consistently meeting the WHO annual guideline with averages below 5 µg/m³.

CHALLENGES

The United States continued to face air quality challenges from PM2.5 emissions, driven by wildfires, dust storms, transportation emissions, power generation, and industrial sources. The Southern California wildfires in January 2025—fueled by Santa Ana winds and drought—burned over 40,000 acres. These fires caused 24 casualties and mass evacuations.[83] Nationally, wildfires remained a key source of PM2.5, with 10,541 recorded fires.[84] AI data centers are an emergent source of PM2.5 pollution, contributing indirectly through the increased power plant emissions required to meet their massive energy demands, and directly through their reliance on diesel generators for backup power. A recent study by researchers at UC Riverside and Caltech estimates that training a single large-scale generative AI model produces more PM2.5 pollution than 10,000 round trips between New York and Los Angeles by car.[85,86]

HIGHLIGHT: LEGAL CHALLENGE TO FEDERAL PM2.5 STANDARD

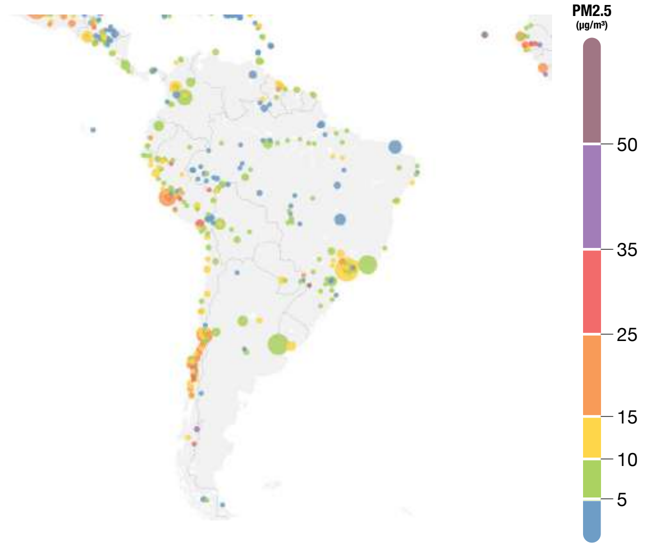
In 2024, the U.S. EPA finalized a revision to the PM2.5 National Ambient Air Quality Standards (NAAQS), which lowered the annual limit from 12 µg/m³ to 9 µg/m³.[87] This codified rule followed a formal scientific review linking the previous standard to adverse health impacts. However, the regulation is now being challenged in *Kentucky et al. v. EPA et al*. In late 2025, the EPA moved to vacate the 2024 rule, seeking to revert to the 12 µg/m³ standard. As of February 2026, the case remains under deliberation, leaving the future of this federal regulatory limit uncertain.



Annual hours spent at different PM2.5 pollution levels

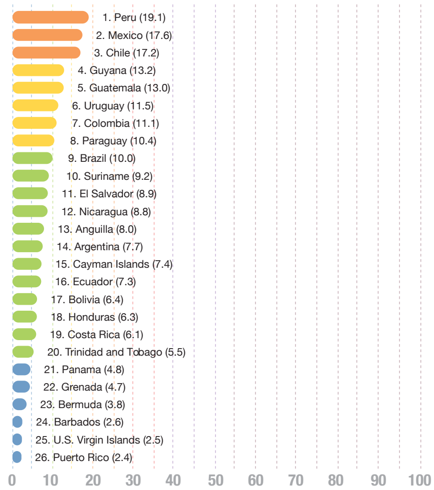
LATIN AMERICA & CARIBBEAN

Anguilla | Argentina | Barbados | Bermuda | Bolivia | Brazil | Cayman Islands | Chile | Colombia | Costa Rica | Ecuador | El Salvador | Grenada | Guatemala | Guyana | Honduras | Mexico | Nicaragua | Panama | Paraguay | Peru | Puerto Rico | Suriname | Trinidad and Tobago | U.S. Virgin Islands | Uruguay



City markers indicating 2025 PM2.5 levels, size adjusted for population

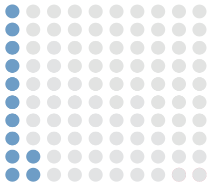
Country/Region Ranking

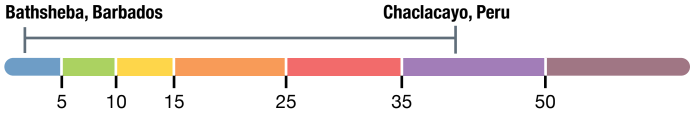


2025 PM2.5 average (µg/m³)

12%

Regional cities that met the WHO annual PM2.5 guideline in 2025





Range of 2025 average PM2.5 (µg/m³) across regional cities

Most Polluted Regional Cities

Rank	City	2025
1	Chaclacayo, Peru	40.6
2	Coyhaique, Chile	37.0
3	Nacimiento, Chile	35.5
4	Santa Anita, Peru	33.0
5	Cochrane, Chile	32.9
6	Tlaxcalancingo, Mexico	32.6
7	Saltillo, Mexico	32.3
8	Santa Anita, Mexico	29.1
9	Puente Piedra, Peru	28.9
10	Comas, Peru	28.7
11	Pitrufquén, Chile	27.9
12	Loncoche, Chile	27.5
13	San Juan de Lurigancho, Peru	27.1
14	San Borja, Peru	26.5
15	Arequipa, Peru	26.1

Least Polluted Regional Cities

Rank	City	2025
1	Bathsheba, Barbados	1.8
2	Puerto Ferro, Puerto Rico	1.8
3	Fortaleza, Brazil	2.0
4	Soyapango, El Salvador	2.0
5	Isabel Segunda, Puerto Rico	2.0
6	San Juan, Puerto Rico	2.3
7	Frederiksted, U.S. Virgin Islands	2.3
8	Mayaguez, Puerto Rico	2.4
9	Fajardo, Puerto Rico	2.5
10	San German, Puerto Rico	2.5
11	Christiansted, U.S. Virgin Islands	2.5
12	Saint Croix, U.S. Virgin Islands	2.5
13	Bridgetown, Barbados	2.6
14	Checker Hall, Barbados	2.7
15	Oistins, Barbados	3.0

SUMMARY

In 2025, the Latin America and Caribbean region was represented by 26 countries, with a total of 325 qualified cities reporting PM2.5 data. Three fewer countries (list countries) met the reporting threshold compared to 2024, reflecting modest changes in regional data availability. At the city level, air quality trends were largely positive. A total of 208 cities recorded decreases in annual average PM2.5 concentrations, while 95 cities experienced increases, nine remained unchanged, and 13 new cities were added to the dataset. At the national level, six countries saw increases in their annual average PM2.5 concentrations, 19 reported decreases, and one country remained unchanged, continuing the broader regional pattern of gradual improvement.

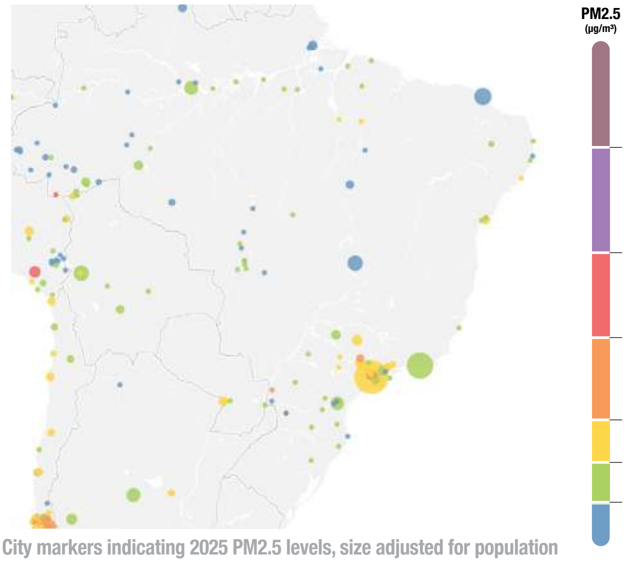
Honduras recorded the largest decline, with its national annual average PM2.5 concentration falling from 15.2 µg/m³ to 6.3 µg/m³, a reduction of 59%. The drought conditions of the 2023, 2024 El Niño season, which created a landscape highly prone to wildfires, subsided with the transition to La Niña for Central American countries. This shift lowered PM2.5 levels by introducing increased rainfall and wind speeds starting in late 2024 and continuing throughout 2025 for Honduras, Guatemala, Nicaragua and El Salvador. In contrast, Peru experienced a 12% increase, rising from a 2024 PM2.5 concentration of 17.1 µg/m³ to 19.1 µg/m³ in 2025; Anguilla also recorded a modest rise from 7.4 µg/m³ to 8 µg/m³, an increase of 8%. Six countries and territories in the region, Puerto Rico, U.S. Virgin Islands, Barbados, Bermuda, Grenada, and Panama, reported annual average PM2.5 concentrations that meet WHO guideline of 5 µg/m³, while Peru, Mexico, and Chile, all reporting 2025 PM2.5 concentrations greater than 15 µg/m³, continue to exceed the WHO Interim Target 2.

MONITORING STATUS

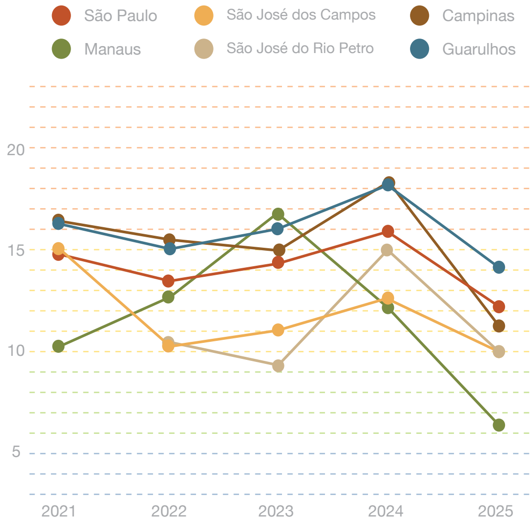
The air quality monitoring network in the Latin America and Caribbean region continued to expand in 2025, with 13 new cities added to the regional dataset. Most of these new locations reported relatively low pollution levels, as nine of the 13 cities recorded annual average PM2.5 concentrations below 10 µg/m³. These additions reflect ongoing improvements in monitoring coverage and data availability, strengthening the overall understanding of air quality conditions across the region.

Brazil led all countries in the number of newly added cities, contributing four of the 13 new locations, followed by Peru with three. With 77 cities meeting data availability requirements, Mexico continued to report the highest number of cities in the region, followed by Chile with 72, Brazil with 57, and Peru with 41. The composition of the monitoring network also highlights the continuing role of non-government sources. Low-cost sensors now account for 29% of all stations in the region, helping to supplement official government-operated monitoring infrastructure and further expand regional coverage.

BRAZIL



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (µg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
São Paulo	12.2	8.2	10.5	11.0	9.9	13.8	14.1	17.0	16.3	13.6	11.7	10.4	10.1	15.9
São José dos Campos	10.0	7.0	9.1	8.5	7.7	9.6	11.9	13.0	12.6	10.4	12.1	9.3	9.3	12.7
Campinas	11.3	7.9	10.5	9.6	8.3	11.2	11.4	13.6	14.0	11.5	14.2	12.6	11.8	18.2
Manaus	6.4	5.3	3.8	3.2	3.5	4.3	5.2	7.6	7.9	11.1	10.3	8.5	5.4	12.2
São José do Rio Preto	10.0	5.4	6.2	7.3	7.2	10.4	11.0	13.0	15.9	18.6	10.6	8.3	5.5	15.0
Guarulhos	14.1	10.6	13.8	12.7	11.0	15.1	16.4	19.7	18.3	14.6	13.6	12.3	10.4	18.1

PROGRESS

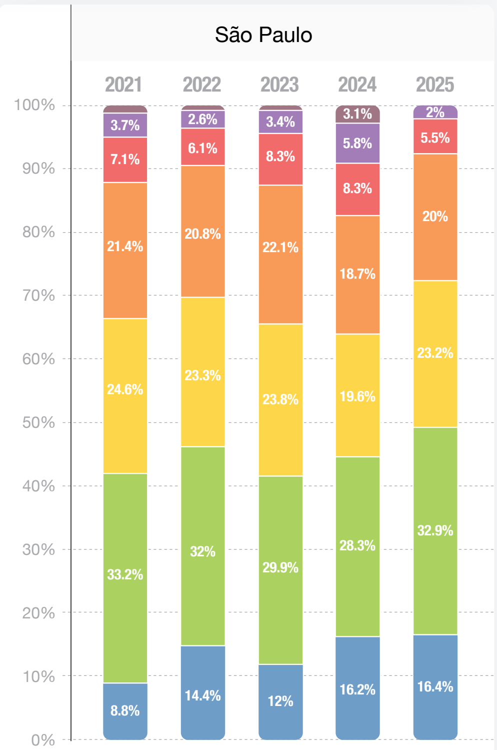
Brazil's annual average PM2.5 concentration decreased significantly from 14.9 µg/m³ in 2024 to 10 µg/m³, placing the country within the WHO Interim Target 2 category. This change represents a year-over-year reduction of 33%. The improvement was driven largely by declines in annual average PM2.5 concentrations across several key cities, including São Paulo, São José dos Campos, São José do Rio Preto, Campinas, Manaus, and Guarulhos. This downward trend was reflected nationwide, with over 80% of cities meeting the data reporting threshold reporting decreases in annual average concentrations. Additionally, lower monthly average PM2.5 levels in August and September suggest a milder wildfire season compared to the previous year. Many cities recorded monthly average concentrations below 5 µg/m³, while the highest monthly values were only slightly above 25 µg/m³. Notably, no monthly average concentrations exceeded 50 µg/m³, in contrast to the previous year.

CHALLENGES

Despite recent progress, Brazil still faces significant air quality challenges driven by local emissions and the long-range transport of particulate matter. In urban areas, particularly in the Southeast, pollution is exacerbated by an aging vehicle fleet, inconsistent enforcement of emission standards, and concentrated industrial activity.[88] While the 2025 wildfire season was less severe than the record-breaking destruction seen in early 2024, smoke from the Amazon and Pantanal still caused major disruptions. Notably, in September 2025, these fires resulted in São Paulo being ranked as the world's most polluted major city for five consecutive days.[89]

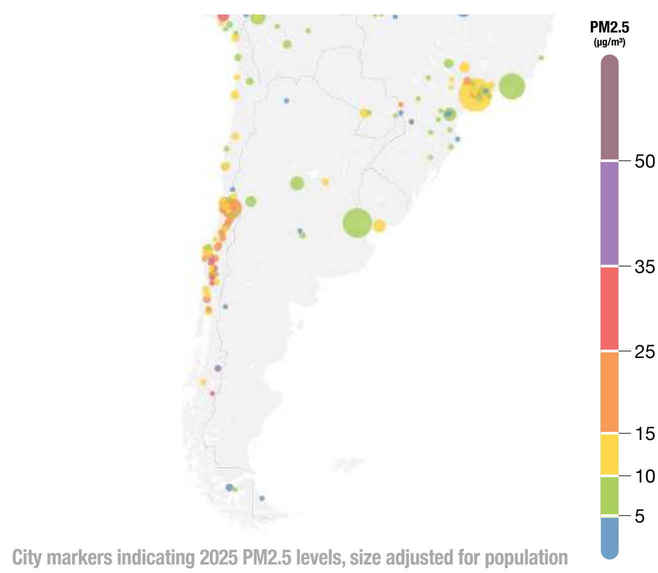
HIGHLIGHT: DEVESTATION BILL

In August 2025, President Lula signed a controversial bill that rolled back four decades of environmental protections.[90] Although he vetoed 63 provisions to maintain strict licensing for major projects and safeguard Indigenous territories, the remaining law—labeled the "Devastation Bill" by critics—drastically streamlines the approval process.[91] By collapsing a three-step licensing sequence into a single stage for "strategic" projects, the legislation raises significant concerns regarding increased deforestation, water contamination, and threats to the Amazon and Atlantic Forest. Despite these risks to public health and climate goals, the President declined activists' calls for a full veto.[92,93]

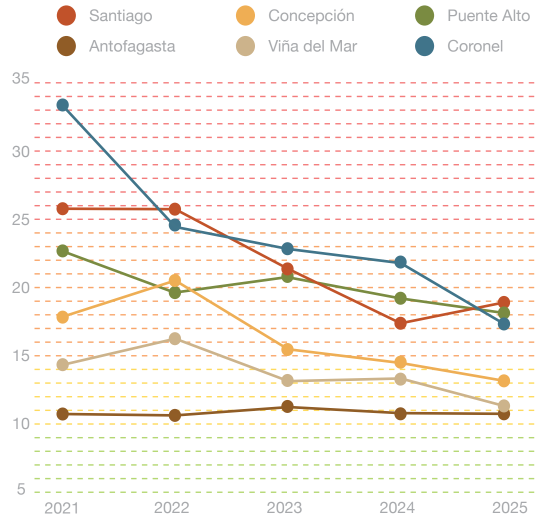


Annual hours spent at different PM2.5 pollution levels

CHILE



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (µg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Santiago	18.9	8.6	9.6	12.0	19.5	34.1	36.7	42.9	20.6	15.2	9.0	8.6	9.7	17.3
Concepción	13.1	8.3	9.2	10.1	11.7	18.7	27.4	24.7	16.2	10.9	7.3	6.9	5.4	14.5
Puente Alto	18.1	21.4	23.0	19.3	14.5	25.5	24.6	27.8	15.7	13.6	10.5	11.0	10.8	19.2
Antofagasta	10.8	8.2	8.8	9.5	9.5	14.4	15.9	15.7	12.4	11.3	9.7	7.4	8.2	10.8
Viña del Mar	11.3	10.2	12.6	11.3	11.6	18.1	18.0	13.0	4.7	5.0	7.7	6.3	16.6	13.2
Coronel	17.3	8.1	8.9	10.3	18.2	31.9	40.1	33.9	21.5	12.7	8.5	7.2	6.3	21.9

PROGRESS

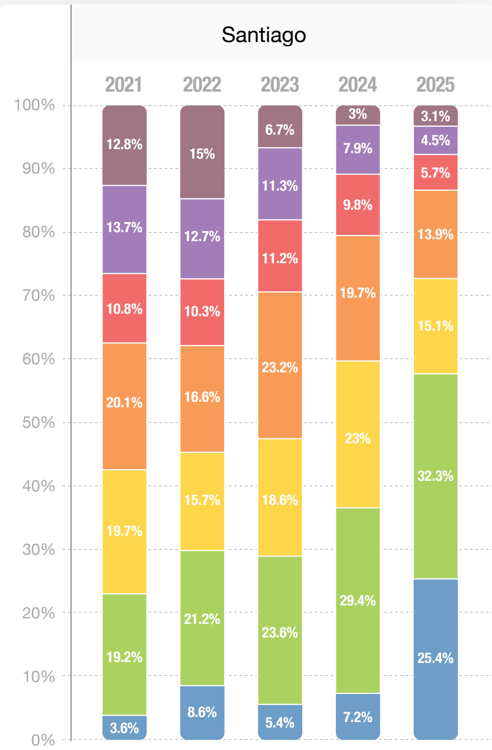
Chile's national annual average PM2.5 concentration experienced a marginal increase in 2025, rising to 17.2 µg/m³ from 16.6 µg/m³ in 2024. Despite this slight gain, long-term trends remain encouraging. In 2025, Chile expanded its monitoring network to 72 cities, with 54% of those reporting year-over-year reductions in PM2.5 levels. Notable improvements were recorded in Pitrufquén, where levels dropped by 8.7 µg/m³, and Coyhaique, which saw an 9% reduction compared to 2024. This progress is particularly significant given that the region was struck by a severe polar anticyclone in June and July, which brought record-breaking cold and heightened the demand for residential wood heating.[94] Furthermore, two cities, Punta Arenas and Cuncumén, successfully met the WHO annual PM2.5 guideline level. While broad improvements are visible in many regions, the capital city of Santiago saw a small increase in annual average PM2.5 levels, rising by 1.6 µg/m³ in 2025.

CHALLENGES

Coyhaique continues to rank as the country's most polluted city, highlighting the ongoing struggle to mitigate wood-burning emissions in southern regions. Residential wood combustion for heating and cooking, alongside road transportation, remains the primary driver of poor air quality. Most major Chilean cities are in the Central Valley, wedged between the high Andes Mountains to the east and the Coastal Range to the west. These geological barriers impede atmospheric ventilation, creating a topographic basin that prevents the horizontal dispersion of pollutants. During the winter, thermal inversions exacerbate these stagnant conditions by trapping smoke and exhaust close to the ground, preventing the vertical mixing of air and sustaining high concentrations of PM2.5.

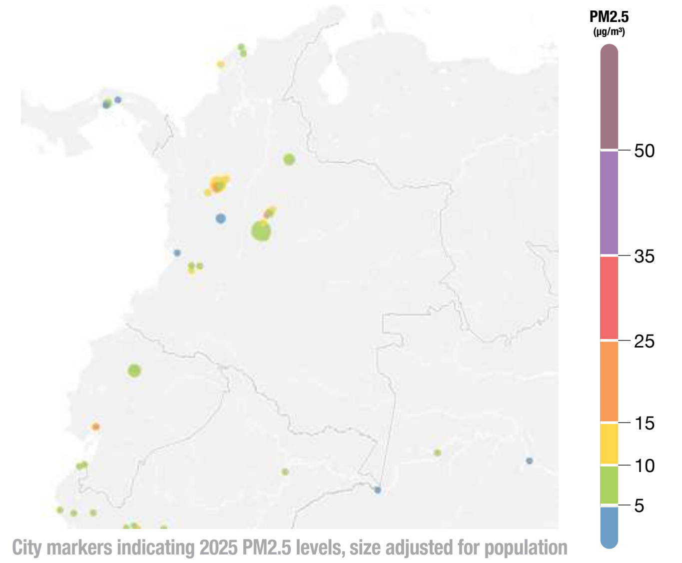
HIGHLIGHT: DECARBONIZING CHILE'S FUTURE

In July 2025, the Chilean government, in partnership with the United Nations Environment Program (UNEP), launched the $5.3 million Net-Zero Nature-Positive Accelerator Program.[95] This initiative targets the decarbonization of energy demand and the advancement of sustainable mobility, addressing two of the country's primary sources of PM2.5 emissions. Additionally, the program focuses on forest and wetland restoration to mitigate wildfire risks, another major contributor to air pollution. By aligning environmental, energy, and finance policies, this initiative aims to drive the systemic shifts necessary to decrease pollution levels and significantly improve public health outcomes.

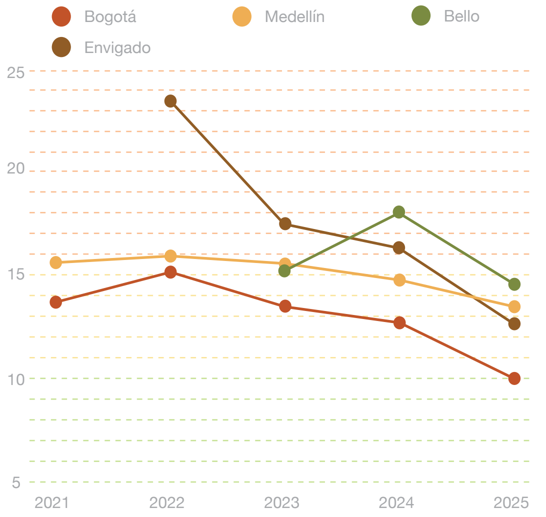


Annual hours spent at different PM2.5 pollution levels

COLOMBIA



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (µg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Bogotá	10.0	11.6	14.2	15.4	9.3	7.3	6.5	5.1	6.5	7.2	10.7	11.9	14.6	12.7
Medellín	13.4	11.7	14.6	19.5	14.7	14.2	11.2	10.5	11.3	11.9	13.2	13.8	14.8	14.8
Bello	14.6	28.3	18.2	20.1	14.1	13.1	11.8	11.6	12.9	14.2	15.6	15.0	16.0	18.0
Envigado	12.8	15.9	17.4	17.8	12.2	12.2	10.1	9.6	10.6	11.8	11.2	12.0	13.9	16.3

PROGRESS

Colombia's national annual average PM2.5 concentration decreased modestly from 13.8 µg/m³ in 2024 to 11.1 µg/m³ in 2025. Annual average concentrations declined slightly across all highlighted cities, including Bogotá, Medellín, Bello, and Envigado. Bogotá continued its year-over-year downward trend, reporting an annual average concentration of 10 µg/m³. This marks the first year the capital met the WHO Interim Target 2 guideline of an annual average concentration at or below 10 µg/m³.

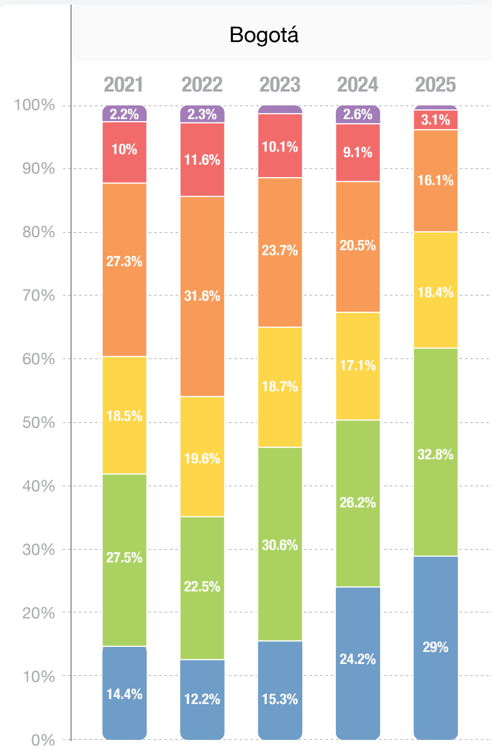
Temperature inversions contributed to higher monthly PM2.5 concentrations across analyzed Colombian cities in February and March compared to other months of the year. Despite these seasonal increases, no city reported a monthly average concentration above 25 µg/m³, in contrast to last year, when multiple cities exceeded 30 µg/m³ during March.

CHALLENGES

In Colombia, PM2.5 pollution is driven by a combination of local urban activity, household energy use, and significant regional transport. Within cities, vehicular exhaust, dust from unpaved roads, and industrial emissions are the primary contributors, while in rural areas, the widespread burning of wood and coal for cooking and heating creates persistently high background levels in both indoor and ambient air.[96] Beyond local sources, PM2.5 levels across Colombian cities are impacted by long range transport of pollutants from other sources such as the regular degassing of volcanos like Nevado del Ruiz, which contributes 7 µg/m³ of background PM2.5 through the atmospheric formation of sulfate aerosols.[97] Additionally, northeast trade winds carry particulate matter from biomass burning in the Orincoco River Basin in Venezuela directly into Colombia, causing sharp season spikes in the Andean region during the dry season months spanning January through May.[98]

HIGHLIGHT: BOGOTÁ WINS "CLEAN OUR AIR" EARTHSHOT PRIZE

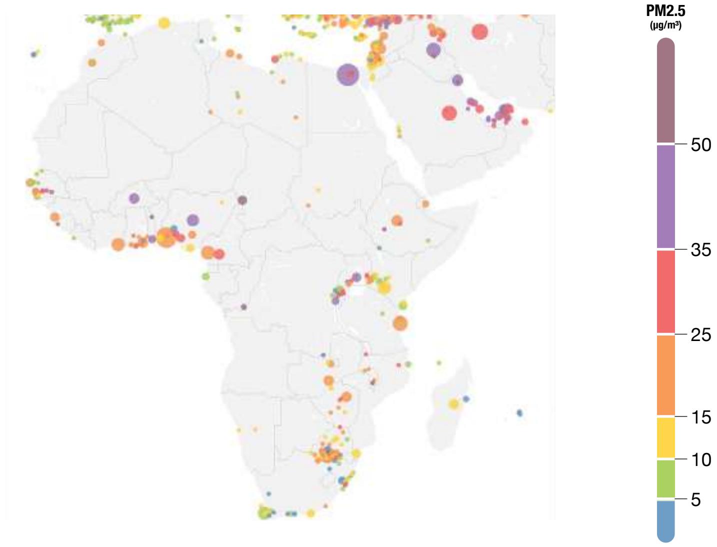
Bogotá's bold clean air policies slashed air pollution by 24% since 2018, earning it the prestigious "Clean Our Air" Earthshot Prize.[99] Bogotá cut emissions by launching 1,400 electric buses, building Latin America's largest cycle network, and restricting heavy freight. Bogotá's first Urban Zone for Clean Air (ZUMA) in Bosa integrated safer walking, cycling, and freight renewal, reducing pollution in a high-density, low-income area. Reclaiming parks and planting 20,000 trees further improved equity and resilience, making Bogotá a model for sustainable, healthier cities.



Annual hours spent at different PM2.5 pollution levels

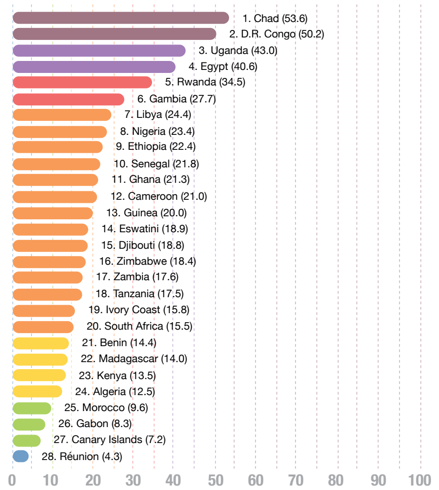
AFRICA

Algeria | Benin | Cameroon | Canary Islands | Chad | Democratic Republic of the Congo | Djibouti | Egypt | Eswatini | Ethiopia | Gabon | Gambia | Ghana | Guinea | Ivory Coast | Kenya | Libya | Madagascar | Morocco | Nigeria | Réunion | Rwanda | Senegal | South Africa | Tanzania | Uganda | Zambia | Zimbabwe



City markers indicating 2025 PM2.5 levels, size adjusted for population

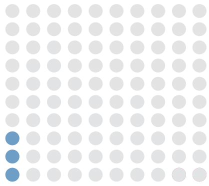
Country/Region Ranking

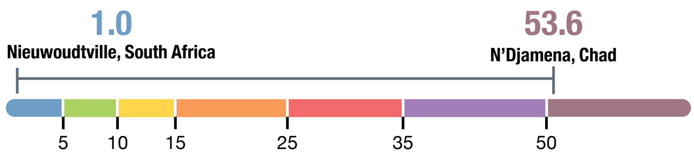


2025 PM2.5 average (µg/m³)

3%

Regional cities that met the WHO annual PM2.5 guideline in 2025





Range of 2025 average PM2.5 (µg/m³) across regional cities

Most Polluted Regional Cities

Rank	City	2025
1	N'Djamena, Chad	53.6
2	Kinshasa, D.R. Congo	50.2
3	Gitarama, Rwanda	47.1
4	Kampala, Uganda	44.2
5	Umkomaas, South Africa	43.3
6	Cairo, Egypt	40.8
7	Bluff, South Africa	38.9
8	Kigali, Rwanda	37.5
9	Vereeniging, South Africa	37.4
10	Basse Santa Su, Gambia	36.2
11	Abuja, Nigeria	35.9
12	Kibungo, Rwanda	33.7
13	Serrekunda, Gambia	29.4
14	Yaounde, Cameroon	28.4
15	Ondo, Nigeria	27.3

Least Polluted Regional Cities

Rank	City	2025
1	Nieuwoudtville, South Africa	1.0
2	La Quinta, Canary Islands	2.3
3	Saint-Denis, Réunion	4.0
4	Mossel Bay, South Africa	4.7
5	Brena Baja, Canary Islands	5.3
6	Lomo de Arico, Canary Islands	5.5
7	Telde, Canary Islands	5.8
8	Los Realejos, Canary Islands	5.8
9	Las Galletas, Canary Islands	5.9
10	Morro del Jable, Canary Islands	6.0
11	Villa de Valverde, Canary Islands	6.0
12	Las Caletas, Canary Islands	6.1
13	Granadilla de Abona, Canary Islands	6.1
14	Saint-Leu, Réunion	6.1
15	Las Palmas de Gran Canaria, Canary Islands	6.2

SUMMARY

The 2025 data for the African region, representing 28 countries and territories, reveals a broad spectrum of air quality outcomes where annual average PM2.5 levels span a range of 50 µg/m³. While island territories like Réunion successfully met WHO guidelines with an average of 4.3 µg/m³, the continental interior presents a more complex picture, where it is estimated that 330 million Sub-Saharan Africans reside in areas where PM2.5 concentrations exceed 35 µg/m³.[100] Notable improvements were observed in key urban centers; for instance, PM2.5 levels in Kinshasa dropped by nearly 14% to 50.2 µg/m³, and Kigali saw an 8% reduction, reaching an annual average of 37.5 µg/m³.

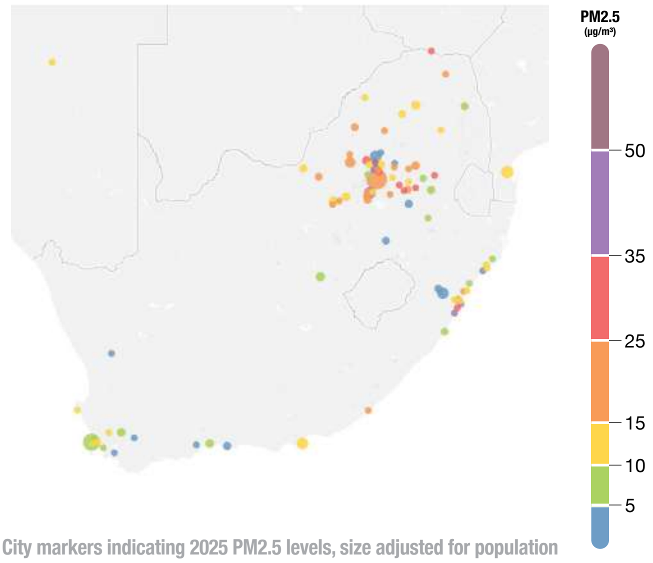
While these figures suggest a positive trajectory, they are best understood when paired with the context of changing data availability. In Chad, a reported annual average of 53.6 µg/m³ appeared as a significant decrease from previous years; however, this shift likely reflects the loss of monitoring data from the U.S. State Department rather than a definitive change in the environment. These nuances highlight the importance of sustained, consistent data collection as the UN projects Africa will be home to more than one-quarter of the global population over the next 25 years.[101] Current trends show a gradual improvement, with the number of cities exceeding the WHO Air Quality Guideline by five to seven times falling to 9%, down from 24% in 2024.

MONITORING STATUS

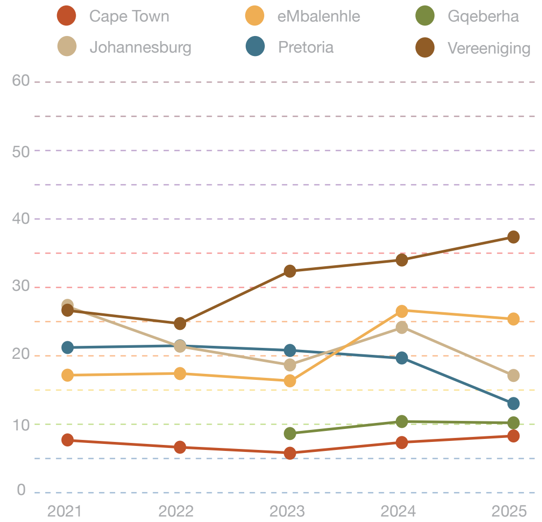
The capacity for air quality monitoring in Africa continues to expand, with the total number of stations rising to 463 in 2025. This growth signals a broader movement toward environmental transparency, though it still accounts for approximately 1% of the global monitoring stations contributing to this year's Report. Current monitoring is characterized by concentrated urban networks, particularly in Nairobi, Addis Ababa, and Kigali, which have established the region's most comprehensive monitoring infrastructures. Nairobi, in particular, leads the continent in the number of monitors providing publicly accessible air quality data.

Regional progress is also being driven by new infrastructure and legislative frameworks. The Gambia nearly doubled its monitoring capacity this year with the addition of 11 new stations, and Ghana's recent Air Quality Management Regulation provides a new legal model for mandatory reporting and centralized data systems.[102] Despite these strides, the reliability of data remains a developmental challenge. In South Africa, for example, technical and maintenance hurdles resulted in only one-third of the national network operational in July 2025.[103] Furthermore, with 12 countries currently relying exclusively on low-cost sensors, the available data serves as a vital but preliminary baseline that will likely be refined as monitoring networks continue to mature.

SOUTH AFRICA



City markers indicating 2025 PM2.5 levels, size adjusted for population



PM2.5 annual average (µg/m³) over 5 years

City	2025	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
Cape Town	8.3	4.1	4.8	5.9	7.9	10.1	11.7	10.1	9.0	10.8	8.9	9.7	5.8	7.2
eMbalenhle	25.4	10.4	9.6	16.7	15.5	41.3	50.2	45.2	41.4	28.8	17.4	11.5	10.0	26.7
Gqeberha	10.2	9.1	8.2	9.6	8.9	11.3	10.4	12.0	11.5	10.2	10.5	9.6	10.9	10.4
Johannesburg	17.1	10.9	12.4	18.2	13.1	20.3	22.4	24.3	23.0	22.5	14.9	11.4	11.0	24.0
Pretoria	13.0	9.5	9.5	12.8	9.2	15.7	17.1	16.9	19.9	18.9	12.1	7.5	6.4	19.6
Vereeniging	37.4	19.6	18.5	32.4	24.4	48.5	68.0	61.0	54.9	43.0	23.6	20.5	20.6	34.0

PROGRESS

In 2025, South Africa's national average PM2.5 levels showed a marginal improvement, with annual concentrations measuring 15.5 µg/m³, a reduction of 3.3 µg/m³ relative to 2024. Despite this progress across 50 reporting cities, industrial hotspots remain a significant concern. The South Durban region, along with the Vaal Triangle and Highveld, continue to be the nation's most degraded airsheds. In the country's three most severely impacted cities, annual PM2.5 concentrations exceeded all WHO annual PM2.5 interim targets and the primary guideline level by more than sevenfold.

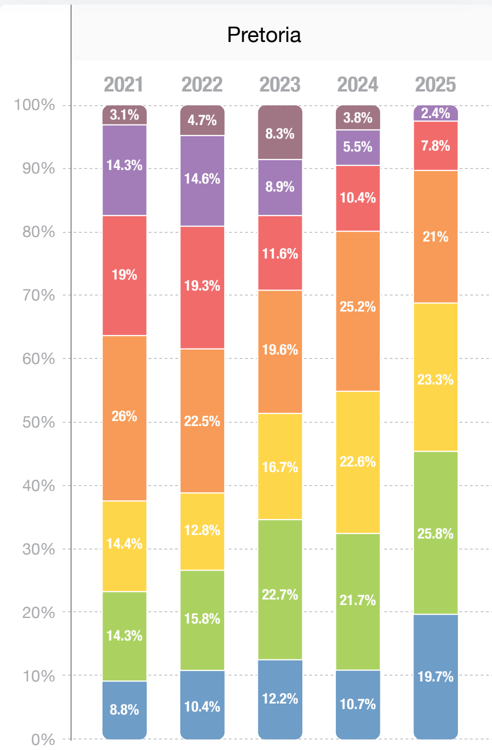
Significant differences exist in regional trends. The capital city of Pretoria saw a 6.6 µg/m³ drop in PM2.5 levels; however, PM2.5 concentrations in Bluff, South Africa's third most polluted city, spiked by more than 50% in 2025, marking a severe local deterioration in air quality. Nationally, 35% of South African cities reported PM2.5 levels three to five times higher than the WHO recommended annual guideline. Notable exceptions are the two cape cities of Mossel Bay and Nieuwoudtville which achieved PM2.5 levels below the WHO 5 µg/m³ annual guideline value.

CHALLENGES

Industrial air pollution is primary driver of PM2.5 levels in the most polluted areas of South Africa. A 2022 study identified energy production as the nation's largest single source of PM2.5, contributing approximately 23% of total concentrations.[104] This impact is most evident in The Vaal Triangle, a heavily industrialized hub south of Johannesburg, hosting a high density of coal-fired power plants, steel mills, and petrochemical plants. The industrial burden is equally severe on the coast. One epidemiological study conducted in the South Durban Industrial Basin, home of sub-Saharan Africa's busiest port, recorded asthma rates of over 50% among schoolchildren in Merebank.[105] This industrial blight extends even further south to Umkomaas, where massive pulp and paper operations have forced the relocation of Umkomaas Drift Primary School due to respiratory health risks.[106]

HIGHLIGHT: COURT RULING IN "DEADLY AIR" CASE

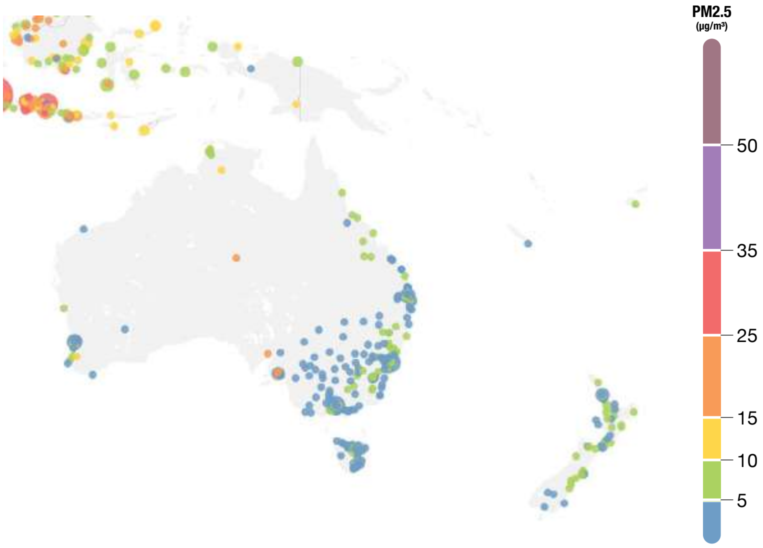
In April 2025, South Africa's Supreme Court of Appeal (SCA) issued a scathing rebuke aimed at the Ministry of Environmental Affairs, ruling the Ministry failed in their legal duty of creating and enforcing binding air quality regulations in the severely polluted Highveld region.[107] The ruling found that despite the declaration of Highveld as a "Priority Area" in 2007, the Ministry had failed to create and implement the regulatory framework to enforce section 24a of the South African Constitution, guaranteeing "the right to an environment not harmful to their health or wellbeing."[108,109,110] The court set a deadline of April 11, 2026, for regulatory policy to be created and implemented.



Annual hours spent at different PM2.5 pollution levels

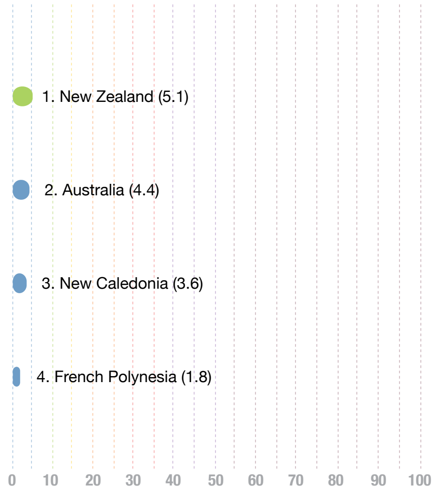
OCEANIA

Australia | French Polynesia | New Caledonia | New Zealand



City markers indicating 2025 PM2.5 levels, size adjusted for population

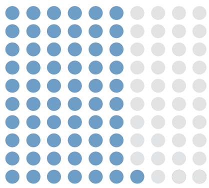
Country/Region Ranking

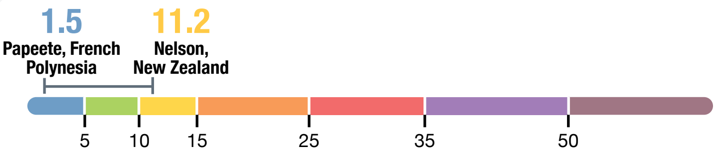


2025 PM2.5 average (µg/m³)

61%

Regional cities that met the WHO annual PM2.5 guideline in 2025





Range of 2025 average PM2.5 (µg/m³) across regional cities

Most Polluted Regional Cities

Rank	City	2025
1	Nelson, New Zealand	11.2
2	Collie, Australia	11.1
3	Richmond, New Zealand	10.6
4	Blenheim, New Zealand	10.0
5	Kaiapoi, New Zealand	9.8
6	Marlow Lagoon, Australia	9.6
7	Gunn Point, Australia	9.2
8	Tokoroa, New Zealand	8.9
9	South Launceston, Australia	8.8
10	Palmerston, Australia	8.6
11	Brighton, Australia	8.2
12	Bunbury, Australia	8.2
13	Florey, Australia	8.0
14	Mayfield West, Australia	8.0
15	Geraldine, New Zealand	7.9

Least Polluted Regional Cities

Rank	City	2025
1	Papeete, French Polynesia	1.5
2	Bourke, Australia	1.8
3	Broken Hill, Australia	1.8
4	Underwood, Australia	2.0
5	Romaine, Australia	2.1
6	Condobolin, Australia	2.2
7	Mornington, Australia	2.2
8	Levin, New Zealand	2.2
9	Gretna, Australia	2.3
10	Euston, Australia	2.5
11	Lismore, Australia	2.5
12	Paddington, Australia	2.5
13	Exeter, Australia	2.5
14	Kingston, Australia	2.5
15	Parkes, Australia	2.6

SUMMARY

Oceania remained the least polluted region in the world in 2025, with 162 out of 265 total cities (61%) meeting the WHO annual PM2.5 guideline. While Australia improved slightly, dropping from 4.5 µg/m³ to 4.4 µg/m³, New Zealand saw a notable increase to 5.1 µg/m³. This follows a period of steady decline for New Zealand and marks the first time since 2021 that the national average has breached the WHO annual guideline of 5 µg/m³. New Caledonia and French Polynesia reported averages of 3.6 µg/m³ and 1.8 µg/m³, respectively.

Capital cities in the region maintained healthy levels in 2025. Wellington held steady at 4.3 µg/m³, while Canberra improved to 3.6 µg/m³ from 3.9 in 2024. Papeete saw a significant drop from 2.8 to 1.5 µg/m³, and Noumea returned with a stable 3.6 µg/m³.

Air quality averages were heavily impacted by June 2025, which saw record-breaking cold across New South Wales, Australia.[111] This surge in cold weather correlated with elevated PM2.5 levels, likely due to increased woodsmoke from home heating. Similarly, New Zealand struggled during the May–August period, typically the country's most challenging window for air quality. This trend is driven by New Zealand's reliance on solid fuel; residential wood smoke remains the single largest contributor to human-made air pollution in the country, with one-third of residents utilizing wood or pellet burners as their primary heat source.

MONITORING STATUS

Oceania's monitoring network expanded to 265 cities in 2025, from its 248 cities 2024 total. Australia added four new cities to reach 231, with its monitoring infrastructure shifting toward a community-led model composed of 38% government monitors and 62% low-cost sensors. Monitoring remains specialized across the Pacific territories: New Caledonia relies exclusively on government monitors for its stations in Noumea, while French Polynesia depends entirely on non-governmental, air sensor data.

Next Steps

What can governments do?

Decreease air pollution emissions

- Adopt WHO air quality guidelines as national and local standards.
- Invest in renewable energy projects and infrastructure.
- Expand public transportation networks and their use of clean energy.
- Create incentive programs for clean air vehicles in personal and commercial use.
- Offer financial incentives to phase out internal combustion engines.
- Subsidize sustainable transportation methods including battery-powered and human-powered transportation options.
- Develop infrastructure that encourages walking and cycling.
- Enforce stricter emission limits for vehicles and industrial sources.
- Practice responsible forest management to lower wildfire risks.
- Enforce bans on agricultural and biomass burning.
- Support creative approaches to improving local air quality.

Expand the air quality monitoring framework

- Increase the number of government-run air quality monitoring stations.
- Provide funding or incentives for community groups, universities, and individuals to set up monitoring stations.

What can I do?

- Support local and national air quality initiatives, policies, and measures targeting pollution reduction.
- Advocate for leaders and organizations that prioritize air quality improvements.
- Share air quality concerns with local representatives and policymakers.

Limit your exposure to air pollution

- Download the free IQAir AirVisual app for real-time air quality updates.
- Stay informed with real-time air quality reports and forecasts.
- Close windows and doors and use A/C recirculation mode when outdoor air quality is poor.
- Limit outdoor activities during poor air quality conditions.
- Wear a high-quality mask outdoors during periods of unhealthy air quality.
- Improve indoor air quality with filtration and purification systems.
- Open doors and windows and use fresh air intake on A/C systems when outdoor air quality is good.

GET IT ON Google Play

Download on the App Store

Lower your personal air pollution footprint

- Use public transportation, walk, or bike whenever possible.
- Reduce energy consumption to save money and lower emissions.
- Replace gas, coal, or wood-burning appliances with eco-friendly heating and cooking options.
- Minimize waste through recycling, upcycling, and buying less.

Become an air quality data contributor

Expanding global access to air quality data is essential for addressing pollution challenges. Local access to air quality information empowers individuals to advocate for clean air initiatives in their communities.

Despite progress, too many global regions still lack real-time air quality data. Strengthening monitoring efforts—whether by governments, organizations, or individuals—is critical.

Advances in low-cost sensor technology make it easier to collect accurate air quality data with minimal setup. As more monitoring stations are deployed, more stations provide valuable data for researchers, policymakers, and communities, driving informed decisions and healthier environments.

To learn more about how to contribute as an individual or as part of a larger community effort, please visit the **IQAir website**.

Methodology

Data sources

The PM2.5 data in the 2025 World Air Quality Report is sourced exclusively from ground-level air quality monitoring stations. Of these, 36% are operated by government entities, while the remaining 64% are managed by non-profit community organizations, educational institutions, and individual citizens utilizing low-cost sensors.

The dataset prioritizes real-time data collection, supplemented by year-end records. Combining historical and real-time PM2.5 measurements ensures the most comprehensive and robust global dataset for analysis.

Data validation

Both regulatory-grade monitors and low-cost sensors can produce data anomalies due to sensor malfunctions or temporary environmental interference. To address these potential issues, IQAir's cloud-based platform applies rigorous quality control to all reported air quality measurements. Suspect data points are flagged and cross-checked against readings from the same sensor and nearby stations. Any data failing to meet quality standards is excluded from the platform and this Report.

Data calibration

This Report includes PM2.5 measurements from low-cost sensors, which use laser scattering technology. Calibration factors are applied to these sensors to correct environmental factors that may affect concentration readings.

Data calculation

Annual average PM2.5 concentrations are calculated using data from individual monitoring stations within each location. Stations continuously sample and timestamp PM2.5 levels from surrounding air, averaging validated readings every 60 minutes to produce hourly concentrations. Over a full year, these hourly averages are used to determine the annual average for cities. For countries, regions, and territories, annual averages are population-weighted to reflect human exposure more accurately.

City level data

City-level data in this Report includes both annual and monthly average PM2.5 concentrations. Monthly averages are derived by averaging all hourly PM2.5 readings within the city for that month. Annual averages are calculated by averaging all hourly concentrations recorded throughout the year.

Country/region data

Annual average PM2.5 concentrations for countries, territories, and regions are calculated using city-level averages and population data within each area. Cities must meet a minimum data availability requirement of 60% of the total annual hours to be included in the Report. The term "area" refers to countries, territories, or regions.

IQAir aims to provide a clear and meaningful comparison of air quality across locations, focusing on airborne pollution exposure and health impacts. A simple average of city-level PM2.5 values would not adequately reflect the relative air quality experienced by residents.

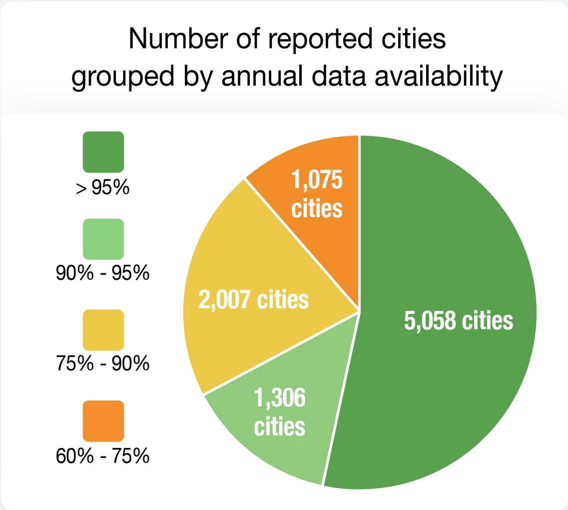
Therefore, population data from cities reporting PM2.5 levels is used to portray a more accurate human perspective on air quality within an area. The population-weighted approach prioritizes conditions in high-density cities, making the annual area-level average a more accurate reflection of real-world exposure. This method is essential for meaningful global air quality comparisons.

The following calculation determines the area-level annual average PM2.5 concentration, using city-level data weighted by population to provide a clearer global perspective:

$$\frac{\Sigma \ \text{city mean PM2.5 } (\mu g/m^3) \ \times \ \text{city population}}{\text{Total population covered by available city data}}$$

Data availability

Annual data availability is the primary metric used to assess whether a city's reported annual average PM2.5 concentration accurately reflects the city's air quality conditions in 2025. Cities must have hourly PM2.5 data available for at least 60% of the year, equating to a minimum of 5,256 hours out of 8,760 total hours to be included in this Report. A summary of the 2025 data availability for PM2.5 data used in this Report can be found below.



The pie chart shows the distribution of the total number of reported cities (9,446) by annual data availability

Disclaimer

All PM2.5 data in this Report comes from ground-level monitoring stations, including regulatory and low-cost sensors, collected during the 2025 calendar year.

IQAir is politically neutral. Maps, graphs, and visualizations are provided for data insight and do not imply any political stance. Regional maps were developed using data visualization tools.

FAQ

Why are some locations (city/country/region) not included in this ranking?

The 2025 World Air Quality Report excludes locations that do not meet the 60% data availability threshold for PM2.5. The Report relies solely on ground-based PM2.5 monitoring station data, excluding satellite-derived measurements to ensure accuracy and real-world relevance.

Why does the data provided within this Report differ from the data provided by my government?

Citywide PM2.5 averages can be calculated using hourly, daily, monthly, or yearly data. IQAir uses hourly station averages to create annual citywide averages, minimizing the impact of outliers. The Report integrates data from both government monitors and independent low-cost sensors, which may not be provided in official government data, offering a broader perspective than official government datasets.

Why is the Report missing some locations that are available on the IQAir website?

Cities must meet a minimum data availability requirement of 60% of the total annual hours to be included in the Report. This standard ensures consistency and reliability. The IQAir **AirVisual platform** supplements real-time coverage with satellite-derived data, marked with an asterisk (*), but this data is not used in the Report.

Where can I find the complete city ranking of all locations included in the Report?

The **IQAir website** provides interactive global city rankings, featuring monthly and historical PM2.5 concentration averages for a detailed view of city pollution levels.

What is adequate data availability?

The 2025 World Air Quality Report maintains a 60% data availability standard for inclusion. Cities must have hourly PM2.5 data for at least 60% of the year to ensure scientific validity while accommodating data from regions with expanding air quality monitoring capabilities.

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About IQAir

IQAir is a Swiss-based air quality technology company that seeks to empower individuals, organizations and communities to breathe cleaner air through information, collaboration and technology solutions.

IQAir's AirVisual global air quality information platform aggregates, validates and calibrates air quality data from a wide variety of sources, including governments, private citizens and organizations. The AirVisual platform supports the free integration of air quality data from a wide variety of data sources and monitoring devices.

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