



Open Data ► Cleaner Air ► Healthier Communities

OpenAQ aggregates and harmonizes open air quality data from across the globe onto an open-source data platform so that anyone concerned about air quality has unfettered access to the data they need to analyze, communicate and advocate for clean air. By providing universal access to air quality data, OpenAQ empowers a global community of changemakers to solve air inequality.

Why Air Quality

99% of us are breathing polluted air, the leading environmental cause of death, cutting lives short by an average of 1.9 years worldwide. Air pollution impacts our health in many ways, starting when we're in the womb. The burden is unequal, with some people being far more vulnerable and some breathing far more polluted air.

Why Open Data

Open data (digital data that can be freely used, reused, and redistributed by anyone, anytime, anywhere) democratizes data access, enables collaboration around key social challenges, allows public oversight of government activities, supports innovative ways to raise awareness, and leads to more durable and equitable solutions.

Why OpenAQ

OpenAQ provides foundational data infrastructure. We were the first to aggregate ground-level ambient air quality data on an open-source platform, making the data findable, accessible, interoperable and reusable. OpenAQ provides unique value due to a combination of attributes that make these global data easily accessible, interpretable and actionable. We:

- harmonize the data into a single, uniform format so that they are easily comparable
- share the data in physical units rather than as an air quality index
- host near real-time and historical data
- share “metadata” (the data that provides the context for individual data points)
- make the data available programmatically via an API
- keep the underlying data-fetching software fully open
- provide tools for users of all abilities to access and use the data

Who We Serve

scientists/researchers/analysts • community advocates •
journalists/communicators/educators • governments • entrepreneurs • and more!

openaq.org • links.openaq.org • info@openaq.org

OpenAQ is a US-based environmental tech nonprofit with tax-exempt 501(c)(3) status.

What is OpenAQ?

OpenAQ is an open-source, open-access database of outdoor air quality measurements, hosting government-measured and research-grade data from locations around the world as well as air sensor data.

Who may use the OpenAQ Platform?

Anyone who cares about air quality and climate change: researchers/analysts, journalists/ storytellers, community-based organizations, app developers, and more!

What data are stored on the OpenAQ Platform?

OpenAQ primarily aggregates PM2.5, PM10, SO2, NO2, CO, O3, BC, RH & T measurement data. For a limited set of locations, we have data for PM1, PM4, CO2, NO, NOx, CH4 & UFP.

How can the OpenAQ Platform be accessed?

OpenAQ provides a REST API for programmatic access of the entire data set. Bulk data downloads are also available via Amazon Web Services S3 object storage downloads. Our interactive web application, OpenAQ Explorer, allows browsing and searching the database from a graphical user interface. A Python wrapper, R client and Command Line Interface are available for the API.

What types of data does your repository accept?

OpenAQ accepts ambient air quality data measurements from ground-level stations. Data must be 'raw' and reported in physical concentrations on their originating site. Data cannot be shared in an 'Air Quality Index' or equivalent format. Data must be at the 'station-level,' associable with geographic coordinates, not aggregated into a higher (e.g. city) level. Data should be from measurements averaged between 5 minutes and 1 hour.

What licenses does your repository support?

OpenAQ prefers CC Zero or CC BY 4.0 licensed data but can discuss other licenses.

Can you help a scientist get their data and metadata archived?

Programmatic access to data is preferred to ingest data into the OpenAQ system. Contact info@openaq.org to discuss how to add your data to the OpenAQ platform.

Do you provide training on how to use your platform?

Links to our training resources can be found in: linktr.ee/openaq. Contact us if you would like to host an OpenAQ training (due to limited capacity, we prioritize larger, mission-aligned projects).

What are your values?

To achieve the best platform possible, OpenAQ develops our technology with the following core values:

- Open: Anyone can access the data for free.
- Open-Source: We believe in transparency. You can see the underlying code.
- Comprehensive: We continually seek new sources of data to build a complete map.
- Accessible: We build tools for a variety of users.
- Trustworthy: The data on our platform come directly from the source.
- Resilient: We work toward a reliable platform that provides the information users need.

Who supports you?

OpenAQ relies on a combination of foundation grants, government grants, and corporate and individual donations.