

# Before You Buy:

# A Guide to Choosing Air Sensors that Allow Fully Open Data Sharing



## Introduction

If you are launching a new air quality network or expanding an existing one, you can maximize the value of the data you generate by sharing the measurements openly. Above and beyond what you intend to accomplish with your own project, creating openly licensed data allows your data to be combined with other data sources to support scientific inquiry, public awareness, solutions development, forecasting, and more – resulting in even greater progress toward a clean air future.

As a bonus, if you are an organization seeking funding for your monitoring project, sharing your data under an open license increases your chances of landing philanthropic and government support. Many funders of air quality monitoring projects require or strongly recommend open data sharing because they want their funds to have the greatest impact.

As the largest nonprofit-led open-source, open-access air quality data platform, OpenAQ would be honored to share your data with the world. We offer the following guidelines that are critically important, no matter whether, when, or with whom you might share data.



## Data ownership

In order to share data beyond the confines of your project, you must have ownership of the data. This means that either:

- You own the equipment directly, no strings attached, or
- If an air sensor firm hosts and manages the data, their terms of use or terms of service clearly state that you (the customer/client) own the data. (In some cases, a co-ownership model may work.)

Whether or not you plan to share your data, data ownership is an important consideration. If you do not own the data you generate, you may be precluded from using the data in certain ways.



## Data licensing

Licensing is the legal framework for how someone may use something you have created, including data.

Data licensing flows from data ownership. If you choose an air sensor company that owns the data or co-owns the data, review their allowable uses. If you own the data and plan to share it, consider what uses you will allow.

Because OpenAQ's mission is to ensure everyone can apply their expertise to solving the air pollution crisis, we only share air sensor data that is licensed under a CC BY 4.0 license or is completely free of copyright restrictions. A [CC BY 4.0 license](#) requires that anyone using the data give credit to the data owner (aka "data attribution"). It allows anyone to use, build upon, and further share the data in any way, including commercial purposes.

While OpenAQ sees air quality data as a public good and strives to share as much air quality data as possible, especially from regions and communities where the air quality is worst and there is the least data, we also honor data sovereignty – the right for everyone to determine how their data is used.



## Data formatting

Whether you plan to share data from instruments that you own or an air sensor company facilitates the sharing, OpenAQ has certain structural and formatting requirements to enable ease of ingestion and allow for the widest range of data uses. Data must be shared:

- In a well-structured format that is machine-readable
- In raw units (e.g. micrograms per cubic meter) as opposed to an “Air Quality Index” (AQIs are useful tools, but don’t offer the precision needed for most use cases.)
- With precise geographic coordinates
- In a timely manner (OpenAQ focuses on real-time data ingestion, but can aggregate data produced in the past as long as the measurements indicate precisely when the data was generated.)



## Steps to follow to ensure you can share data with OpenAQ

If you purchase equipment from an air sensor company that plays an ongoing role (e.g. manages the data on their platform):

- Make sure the company grants you data ownership rights. You must have the legal right to share the data via a [CC BY 4.0 license](#) or more liberal license.
- If the company holds the ownership right to the data and you wish to make it openly available, talk to the provider about working with OpenAQ to license it openly.
- Where the company has an existing partnership with OpenAQ (see [Air Sensor Partners](#)), ‘opt in’ to sharing your sensor data with OpenAQ. In other words, inform the company that you wish to share the data via OpenAQ.
- If the company you are considering does not yet have a relationship with OpenAQ, ask them to contact us to determine compatibility, develop a data sharing agreement, and create a technical integration. The EPIC Air Quality

Fund has a non-exhaustive [list of air sensor companies](#) that have indicated their status with regard to data ownership, data sharing, compliance with open data criteria, and integration with OpenAQ. OpenAQ is always delighted to develop new data sharing partnerships with air sensor firms that believe in the value of open data.

If you purchase monitoring equipment that you own outright (no further relationship with the manufacturer), data sharing with OpenAQ is typically feasible, can be complex. Among other things, make sure that your IT system has security measures in place to ensure that no one can access any part of your IT system other than the data you share.



## The Power of Communal Sharing

OpenAQ is an open data success story. Changemakers around the globe use our platform for the critical work of air pollution analysis, awareness, and advocacy. This success is only possible due to the countless individuals and organizations that have made their data fully open for public use. We encourage and appreciate anyone deploying a new air monitoring network to follow suit as we collectively fight for clean air through the power of open data.



## About OpenAQ

OpenAQ aggregates open air quality data from across the globe onto an open-source, open-access 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. We also equip data practitioners with tools and training to understand and effectively use these data for community engagement, research, and policymaking.

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