Imagine a World Where People Breathe Equally the Same Air

GO AQS

GLOBAL OPEN AIR QUALITY STANDARDS

October 2024

Global Open Air Quality Standards (**GO AQS**)

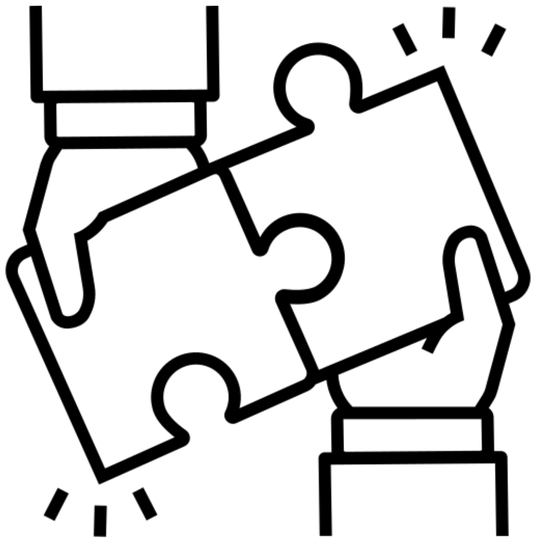
GO AQS establishes a new benchmark for clean air – a set of transparent, science-backed standards that all **people** and **integrators** can strive for.

Join us on our mission to create a world where everyone breathes the same clean air.

Global Open Air Quality Standards (**GO AQS**)

How can you help?

GO AQS is open and free which means that your company or institution can contribute to this new standard.



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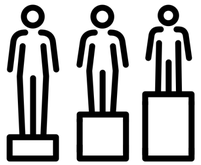
What GO AQS offers?

Equality

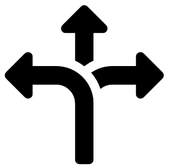


Equity

Space Adaptability

Universal

Health



Flexibility

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What are the issues currently?

Different Units of Measurements (µg/m^3, ppm, ppb, etc)

Analogy: Air Quality is like temperature values when you travel abroad.

US residents don't understand Celsius (°C) when visiting Rome and Europeans don't understand Fahrenheit (°F) when visiting New York.

However, it is important for both to know what is going on to get dressed properly.

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What are the issues currently?

Inconsistent Standards

Analogy: Air Quality is like the speed limit when you drive abroad.

E.g. $PM_{2.5}$: US EPA 9 µg/m³, EEA 10 µg/m³, Ireland EPA 25 µg/m³, WELL 15 µg/m³, WHO 5 µg/m³, RESET 12 µg/m³, etc)

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What are the issues currently?

Plethora of Air Quality Indices

Analogy: Air Quality is like being in a bakery, where you don't know which sweet is the best.

E.g. EPA AQI, EEA AQI, Hong Kong AQI, etc

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What are the issues currently?

Inaccessible

Analogy: Air Quality information is like trying to find a needle in a haystack in some countries.

Information regarding target limits, AQI, and real-time measurements is very difficult to find in some areas worldwide.

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What are the issues currently?

AQ Integrators

Analogy: Air Quality integrators are like spokespersons, responsible for communicating air quality information to the users, but unable to communicate in one common language.

Proprietary and country oriented AQ indices are very limited especially in a global market.

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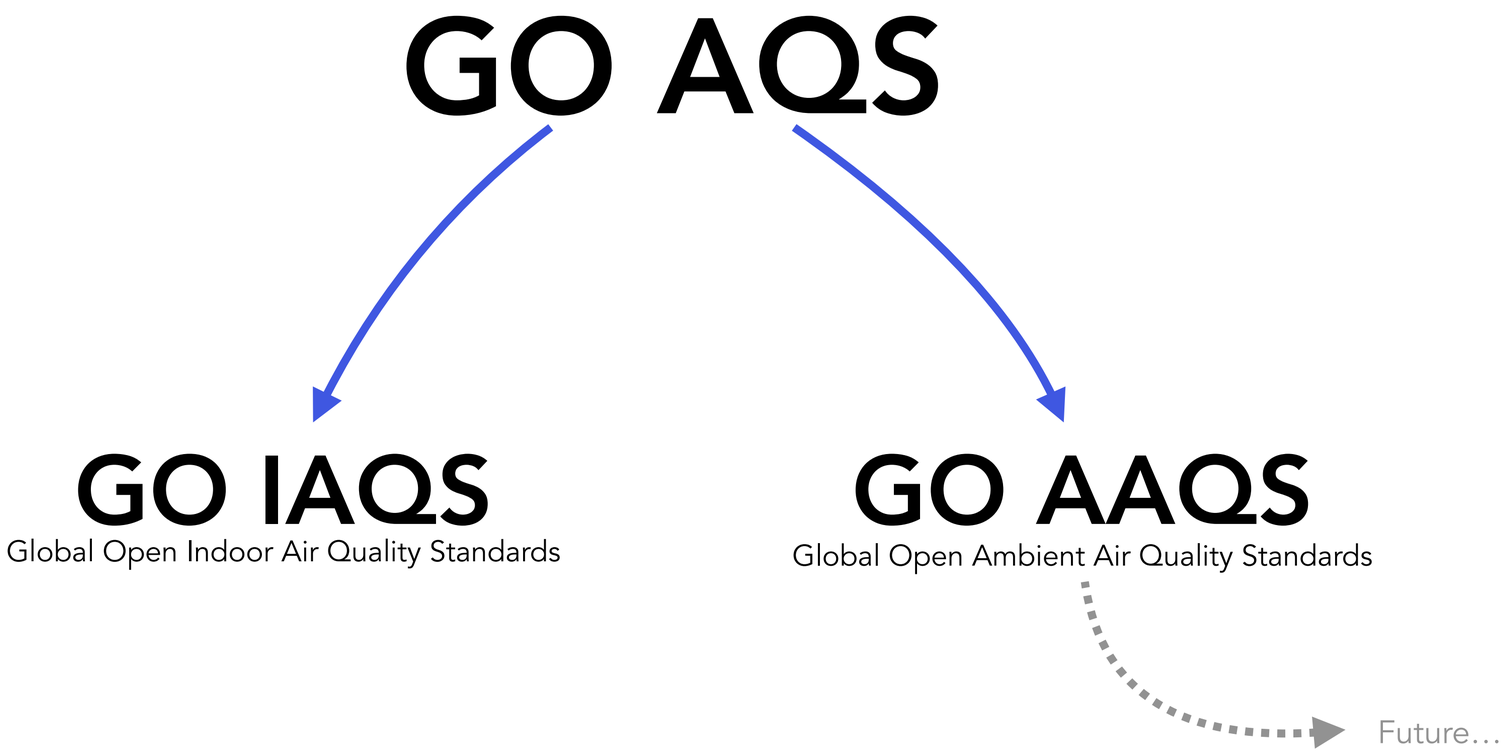

GO IAQS

A passion for
Indoor Air

Global Open Indoor Air Quality Standards (**GO IAQS**)

“No safe level of air pollution exists"

(World Health Organization, 2021)

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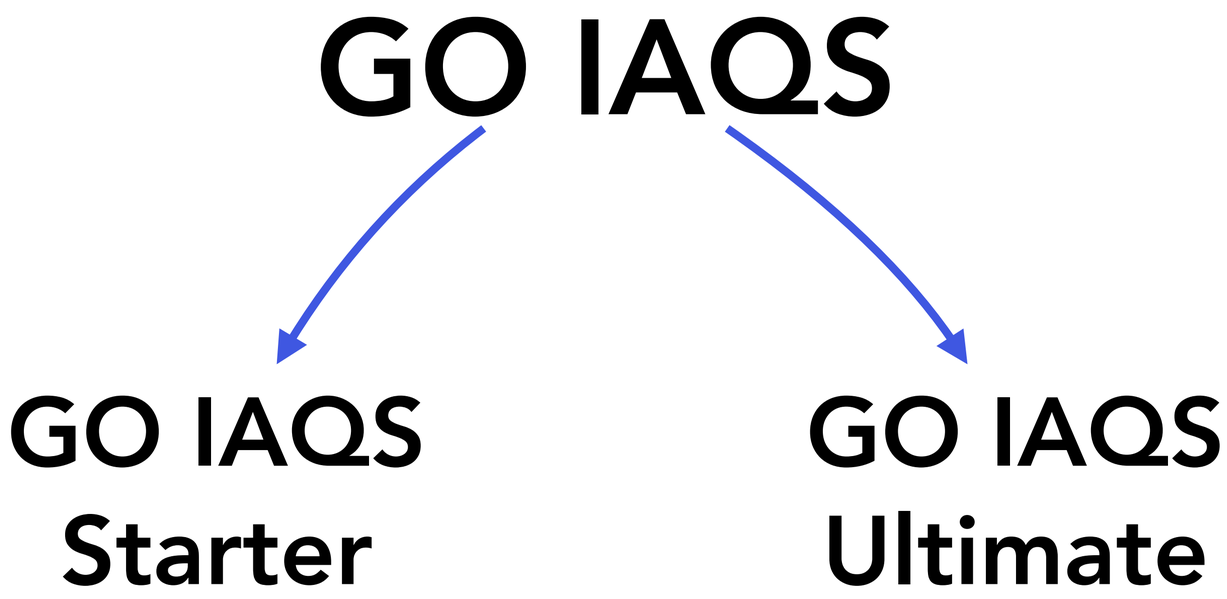
Standards



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GO IAQS & Space Adaptability

GO IAQS Limits	**Indoor Environment**
1-hour	Fitness Center & Gym/Indoor Playground/Healthcare
8-hour	Office/Hospitality
24-hour	Domestic/Short-term Evaluation
1-year	Long-term Evaluation

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Standards GO IAQS Starter

A starter standard is a great first step for those who lack the resources for stricter protocols

GO IAQS Starter Limits	PM2.5	CO_2
1-hour	10 µg/m^3	850 ppm
8-hour	12 µg/m^3	1000 ppm
24-hour	20 µg/m^3	850 ppm
1-year	12 µg/m^3	750 ppm

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Standards GO IAQS Ultimate

The Ultimate standard was developed for buildings that want to offer ever higher performance and health protection to occupants

GO IAQS Ultimate	PM2.5	CO_2	PCN0.3	PCN0.5*	O_3	HCOH	CO
1-hour	8 µg/m³	750 ppm	25 p/cm³	25 p/cm³	80 µg/m³	50 µg/m³	TBD
8-hour	12 µg/m³	850 ppm	40 p/cm³	40 p/cm³	100 µg/m³	80 µg/m³	TBD
24-hour	12 µg/m³	750 ppm	40 p/cm³	40 p/cm³	100 µg/m³	80 µg/m³	TBD
1-year	8 µg/m³	650 ppm	25 p/cm³	25 p/cm³	100 µg/m³	80 µg/m³	TBD

* Alternative to PCN0.3

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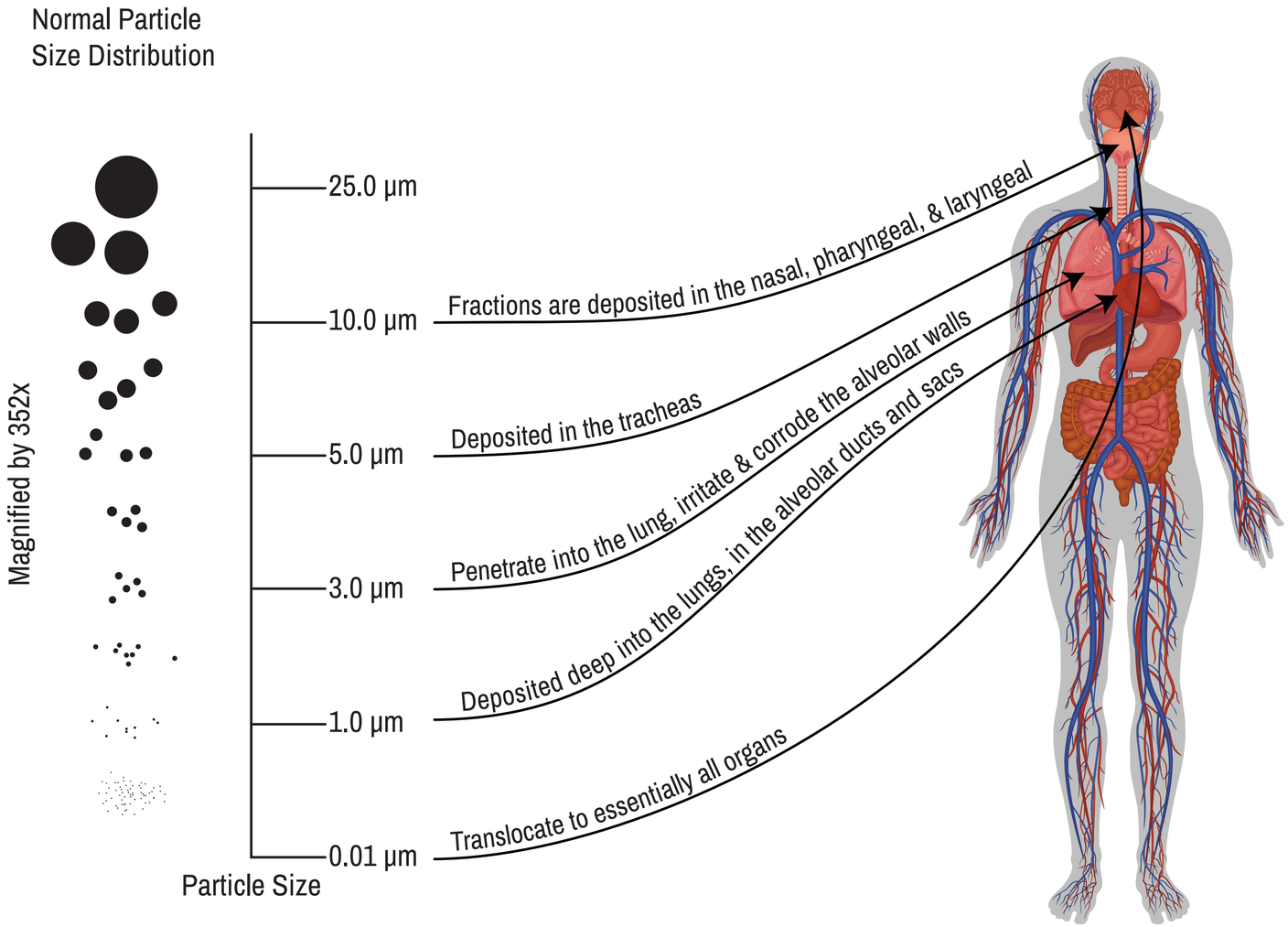
Why PCN for sub-micron particles



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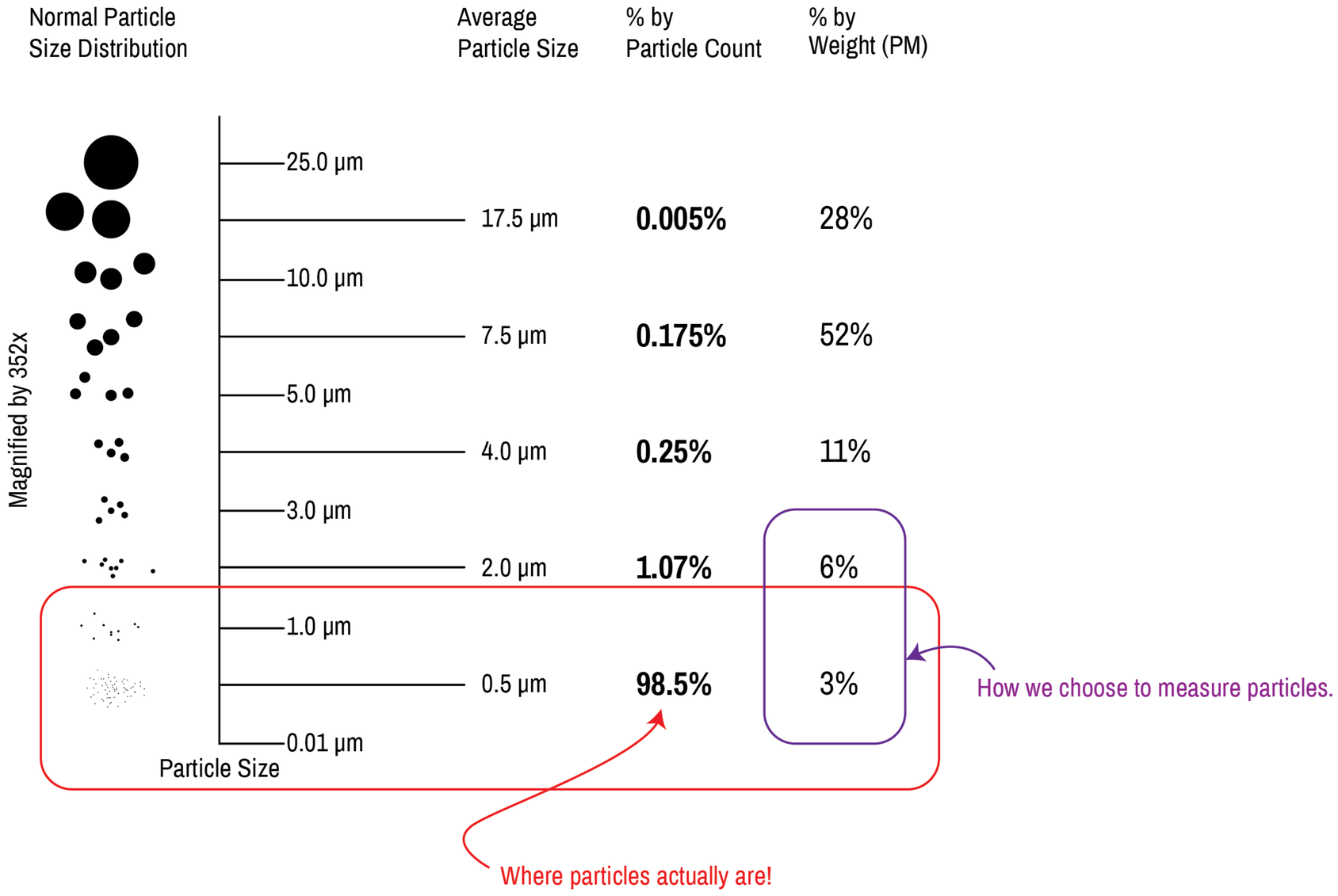
Why PCN for sub-micron particles



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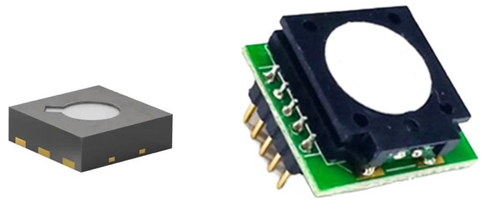
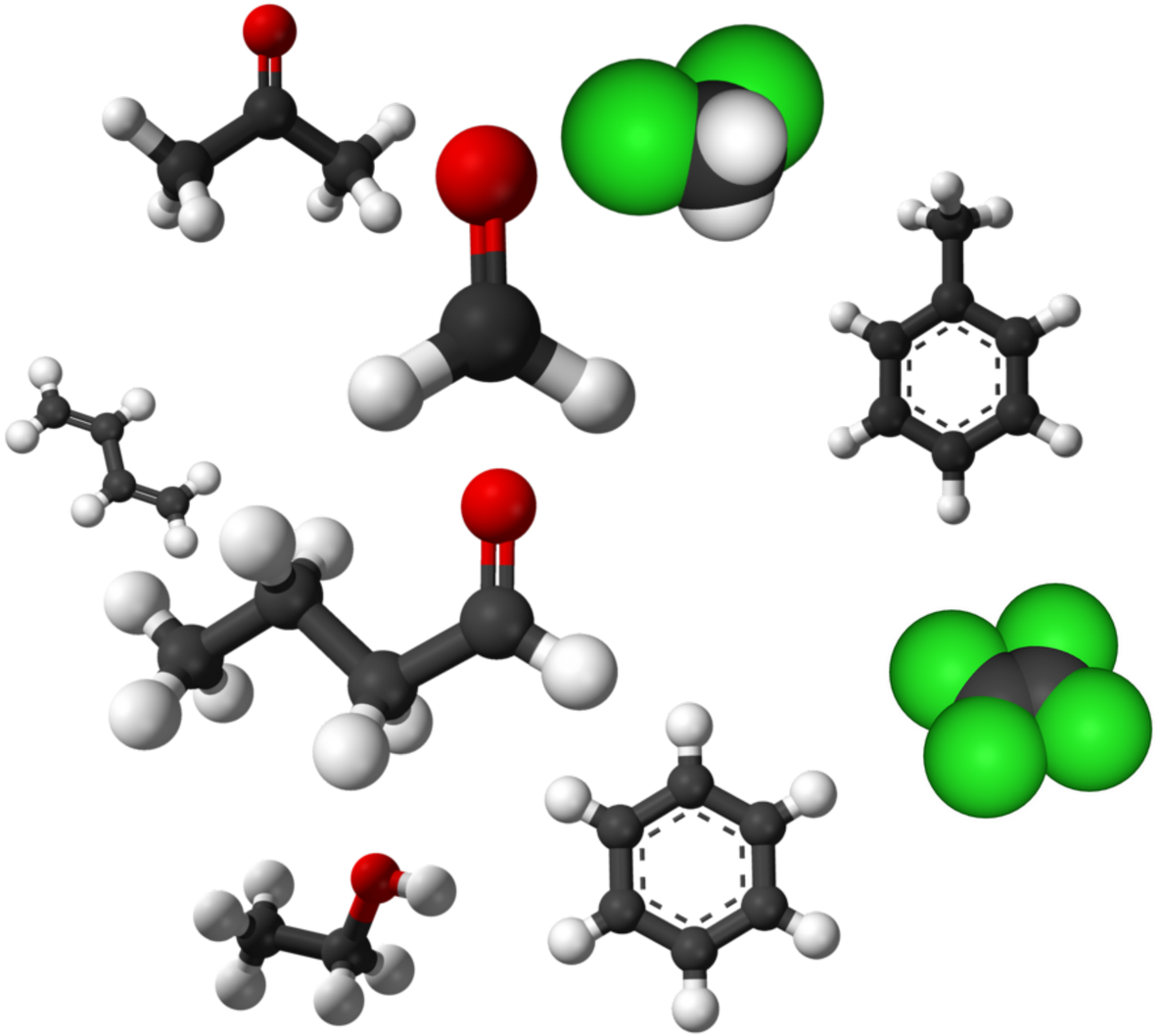
Why not TVOC



Electrochemical TVOC

Photoionization (PID) TVOC



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Why not TVOC

Photoionization (PID) TVOC

Methane

Dichloromethane
Formaldehyde
Methanol

Methyl Bromide
Hydrogen Sulphide
Ethanol
Ammonia
Isopropanol
Hexane

Benzene
Butadiene
Xylene

10.0 eV Lamp (1-2 Yr.)*

10.6 eV Lamp (1-3 Yr.)*

11.7 eV Lamp (1-3 Mo.)*

*** expected lamp life subject to use and application**

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Air Quality Score (Index)

The GO AQS Score, aka AQI, is a measurement system that translates complex air pollution data into a user-friendly score

Description	Number Score	Letter Score	Health advice
Good	10 - 8	A	Ideal air quality - Enjoy activities
Moderate	7- 5	B	Cut back or reschedule strenuous activities
Bad	4- 1	C	Avoid all physical activities (wear N95/FFP3 masks and use personal or central air filtration systems in case of particle pollution or high carbon dioxide levels)

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Indoor Air Quality Index

Indoor AQI	😀	😱			☠️	
Brand 1	100-81	80-61	60-41	40-21	20-0	
Brand 2	100-81	80-61	60-41	40-21	20-0	
Brand 3	0-20	21-50	51-100	101-150	151-250	251
Brand 4	0-50	51-100	101-150	151-200	201-300	301
…						

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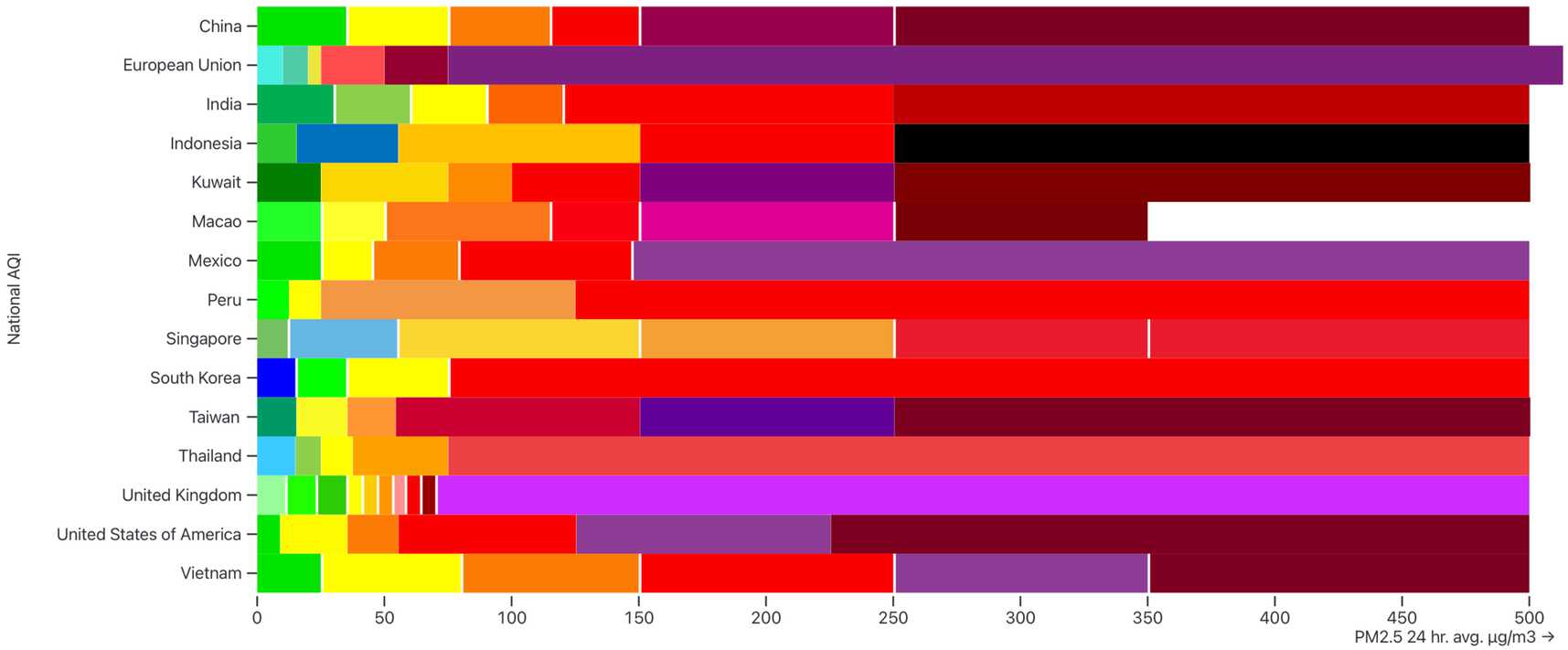
Ambient Air Quality Index



Introduction | OPENAQ - AQI Hub. (n.d.). https://aqihub.info/

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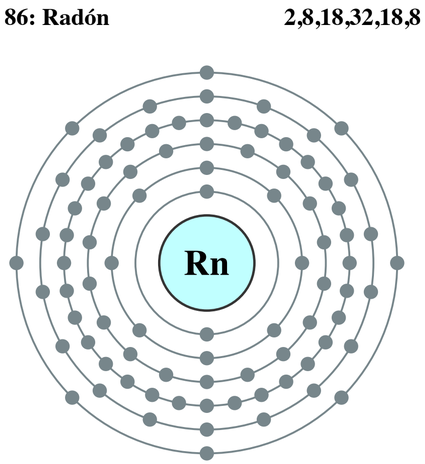
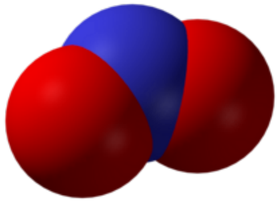
What's next



Radon



Nitrogen Dioxide (NO_2)

- Is GO IAQS suitable for mobile micro-environments?
- Is it suitable for both white- and blue-collar workers?
- Is it necessary to assign differential weights to certain pollutants in the AQI calculation?

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What's next

ExoCO causes illness and death in HORMETIC FASHION, so not just at very high levels but also at very low levels -- per IQR increase (shown) or per 1 ppm above ambient

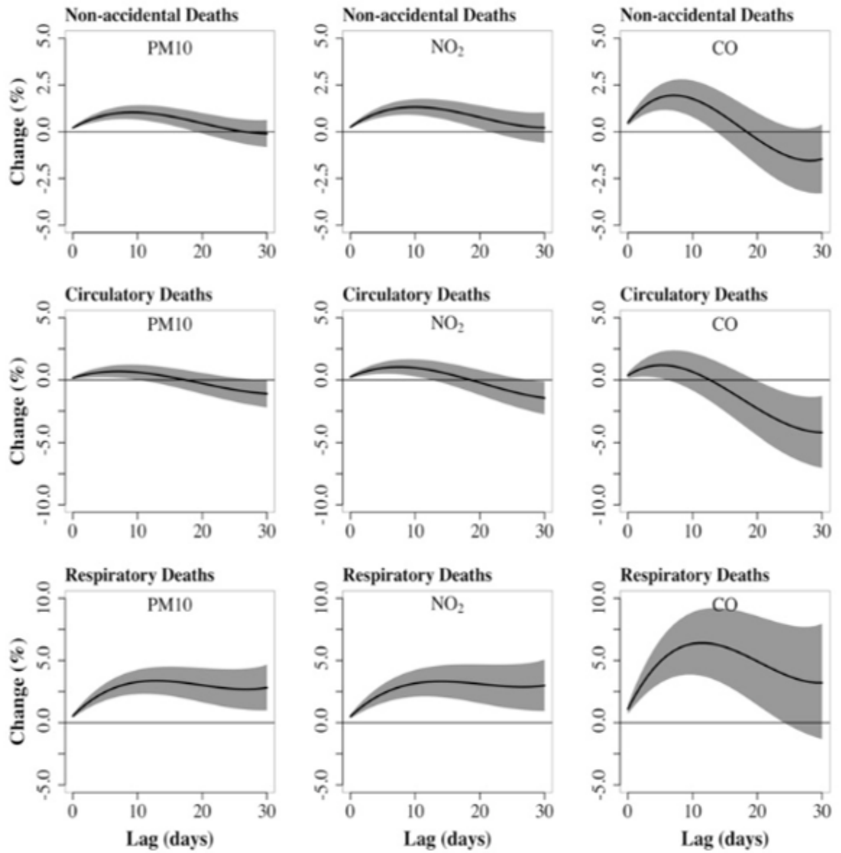
› Environ Health Perspect. 2017 Mar;125(3):349-354. doi: 10.1289/EHP98. Epub 2016 Oct 7.

Air Pollution and Deaths among Elderly Residents of São Paulo, Brazil: An Analysis of Mortality Displacement

Amine Farias Costa [1], Gerard Hoek, Bert Brunekreef, Antônio C M Ponce de Leon

Affiliations + expand

PMID: 27713111 PMCID: PMC5332200 DOI: 10.1289/EHP98



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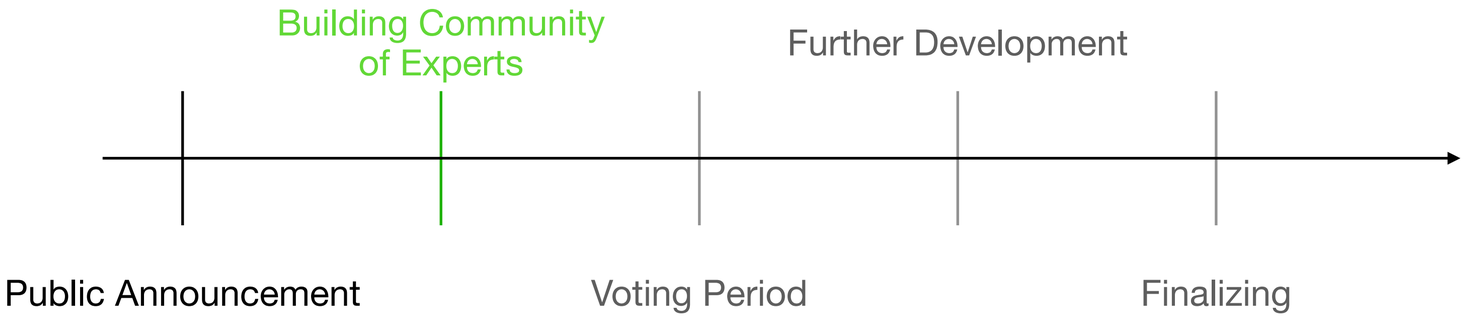
Roadmap



Global Open Indoor Air Quality Standards (**GO IAQS**)

Governance

Main Committee ⟶ Voting Obligations, Development, and Decision-making

Advisory Expert ⟶ Voting Obligations, Specialized knowledge, and Guidance

Ambassadors ⟶ Promote GO AQS and Engage with the Community

Let’s create a world where everyone breathes the same clean air

www.goaqs.org

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