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Building A Cleaner & Healthier Indonesia

Air pollution is both an environmental and health problem

According to the WHO, air pollution is the #1 environmental threat to human health around the world

Environment

Health

Human activity causes pollution

Concentrations of pollutants like PM2.5 increase

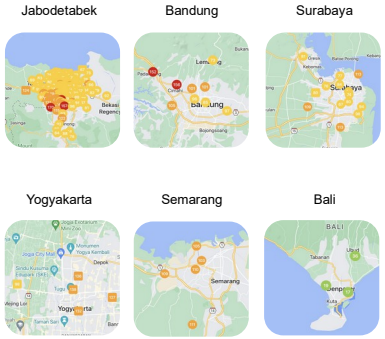
People breathe more pollution at higher concentrations

People get sicker and die earlier

WHAT IS NAFAS?

Nafas is building Indonesia's largest air quality ecosystem, making breathing healthy air quality a reality in polluted cities

Outdoor Air Quality Monitoring



- Over 180+ outdoor air quality monitors in 15 cities
- Continuous data helps people make lifestyle decisions
- Over 6 million data points per month
- <5 days deployment time for new sensors

Mobile App

- Displays real-time data from outdoor air quality network
- Shares information to users to make lifestyle decisions based on air pollution
- Connects and controls locally developed IoT devices
- Provides access to air quality data - indoor and outdoor

Locally Developed & Manufactured IoT Devices

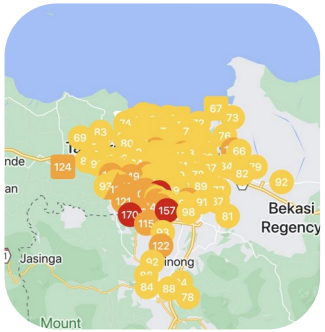
- One of the only consumer electronics R&D startups in Indonesia
- Air monitor fully designed and manufactured in Indonesia
- Air purifier electronics designed and assembled in Indonesia
- Awaiting TKDN certification

Clean Air As A Service Subscription Solution

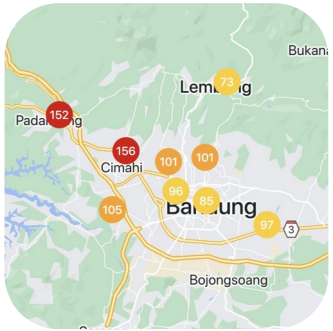
- Indonesia's first connected indoor air quality management system - including monitoring and filtration
- Assetless subscription model with zero upfront cost to business
- ESG and Sustainability ratings for Workplace Health & Safety fulfilled using real data

Today, Nafas Has the Largest Outdoor Air Quality Network in Indonesia

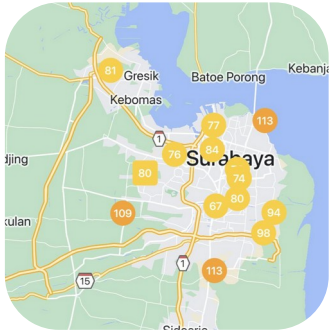
Jabodetabek



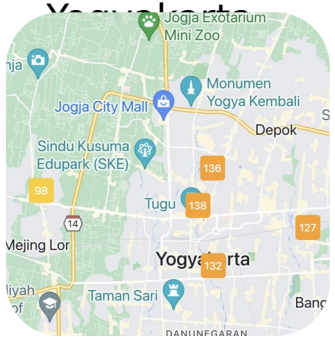
Bandung



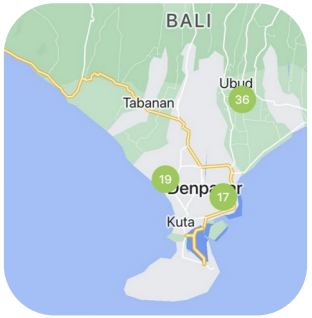
Surabaya



DI Yogyakarta



Bali



Semarang

Malang

Lampung

Belitung

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Current Network:

180+ Sensor Locations in **15** Cities

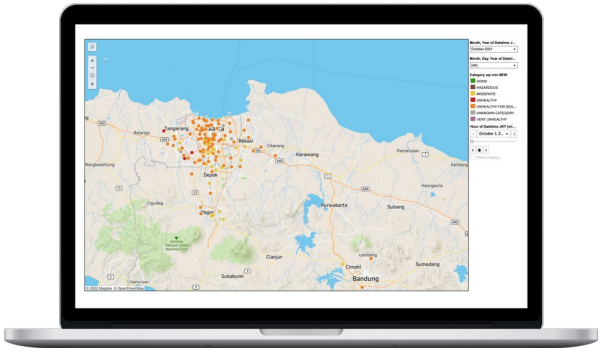
Nafas Conducts Analysis of Air Quality Data In Ways Never Before Seen in Indonesia

Individual Location Analysis

24 Hour Averages

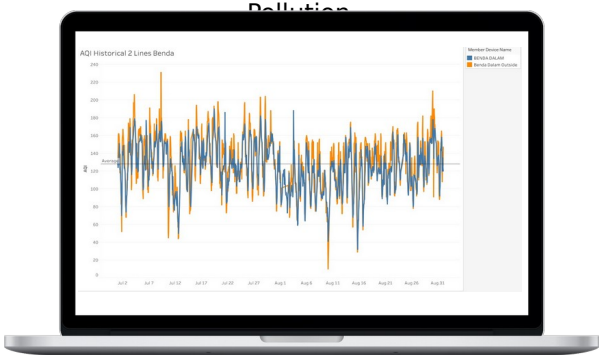
Regional Differentiation

Transboundary Pollution Analysis



Impact of Atmosphere

Comparison of Indoor vs Outdoor Pollution



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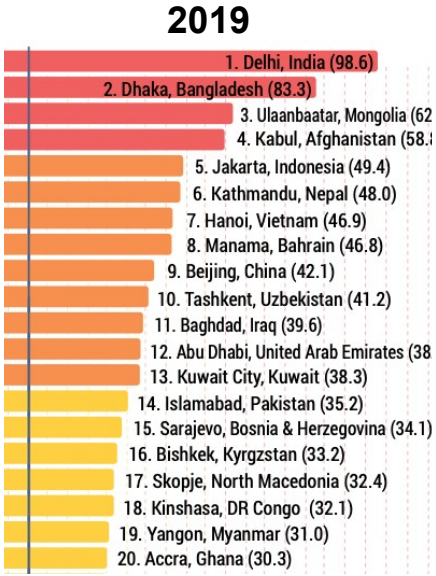
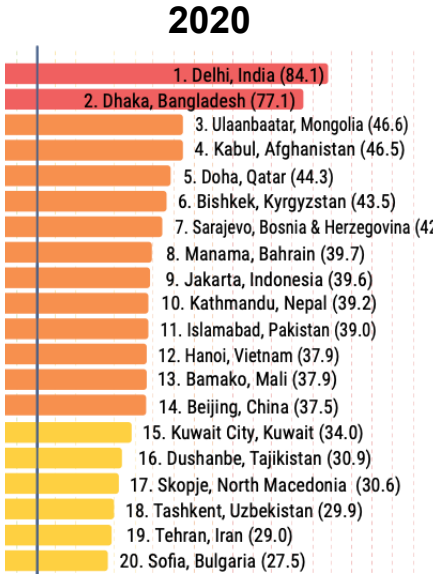
Source: Nafas internal dashboard

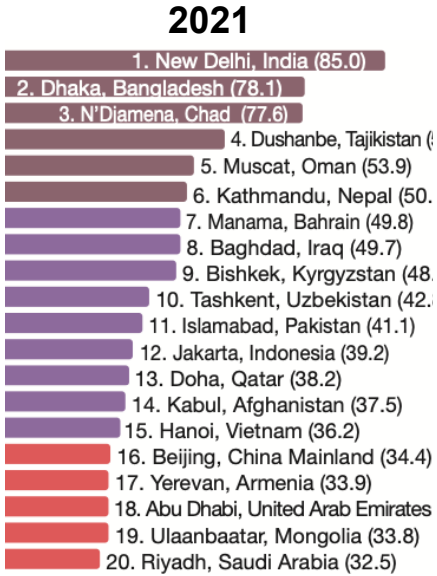
Jakarta consistently falls into the top worst polluted capitals in the world



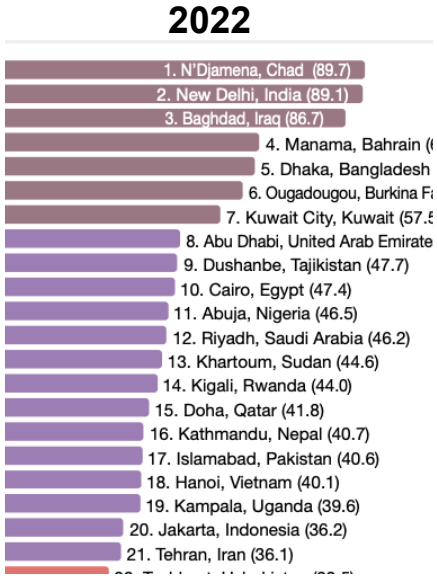
Ranking
5/85



Ranking
9/92



Ranking
12/107

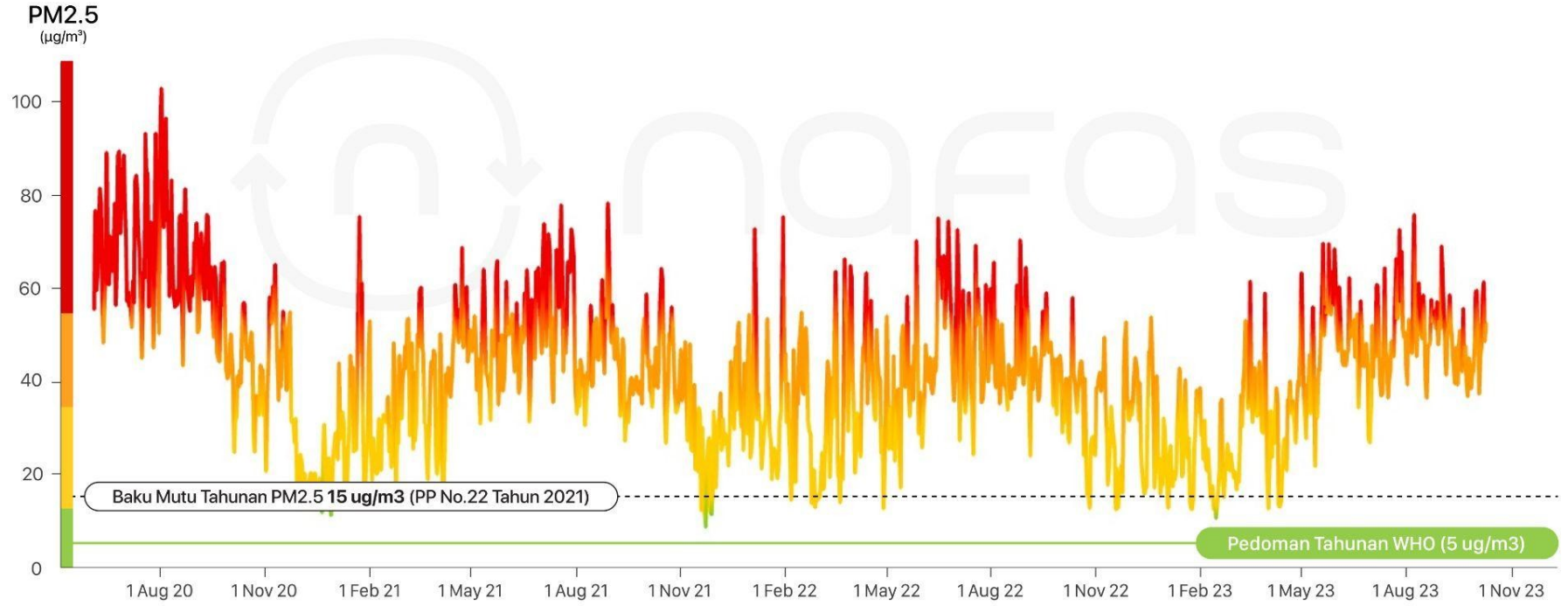


Ranking
20/116

Source: IQAir

Jabodetabek

4 Juni 2020 - 8 Oktober 2023



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Baik · Moderat · Tidak Sehat Bagi Kelompok Sensitif · Tidak Sehat

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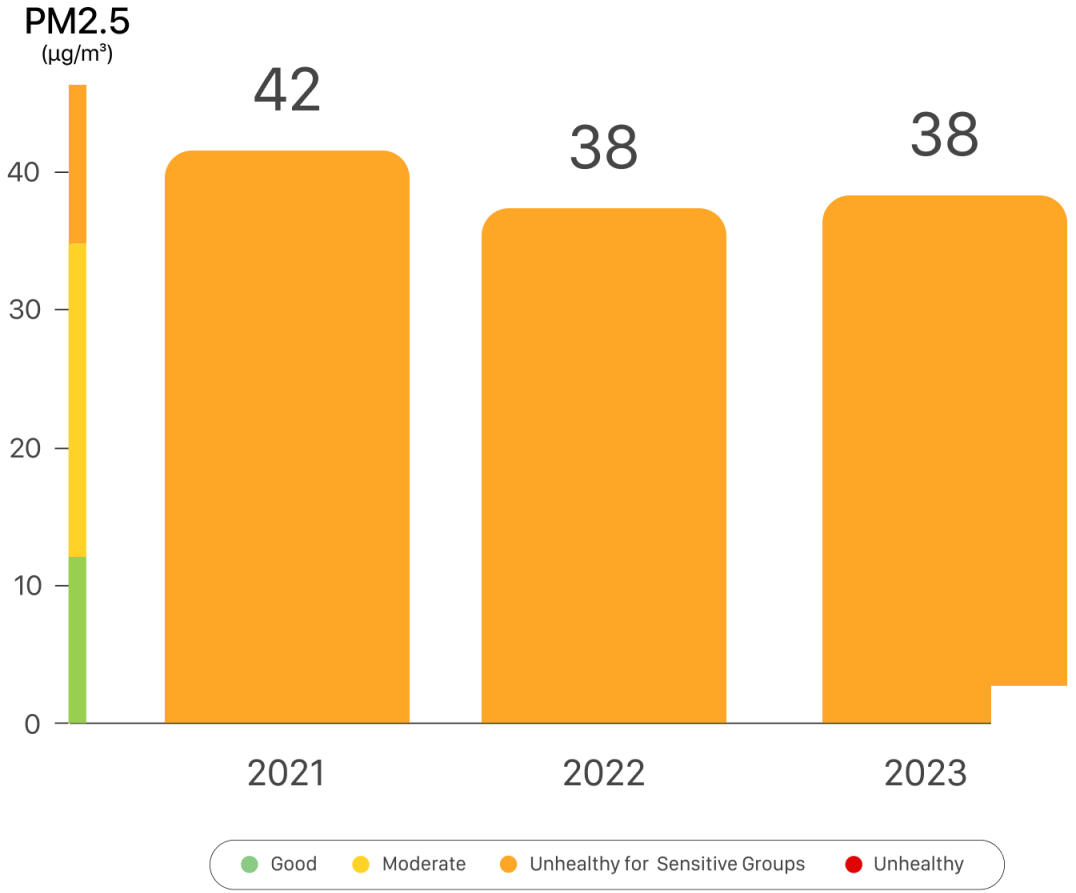
All Nafas Sensors Network

(Java, Bali, Belitung, Kep. Seribu)

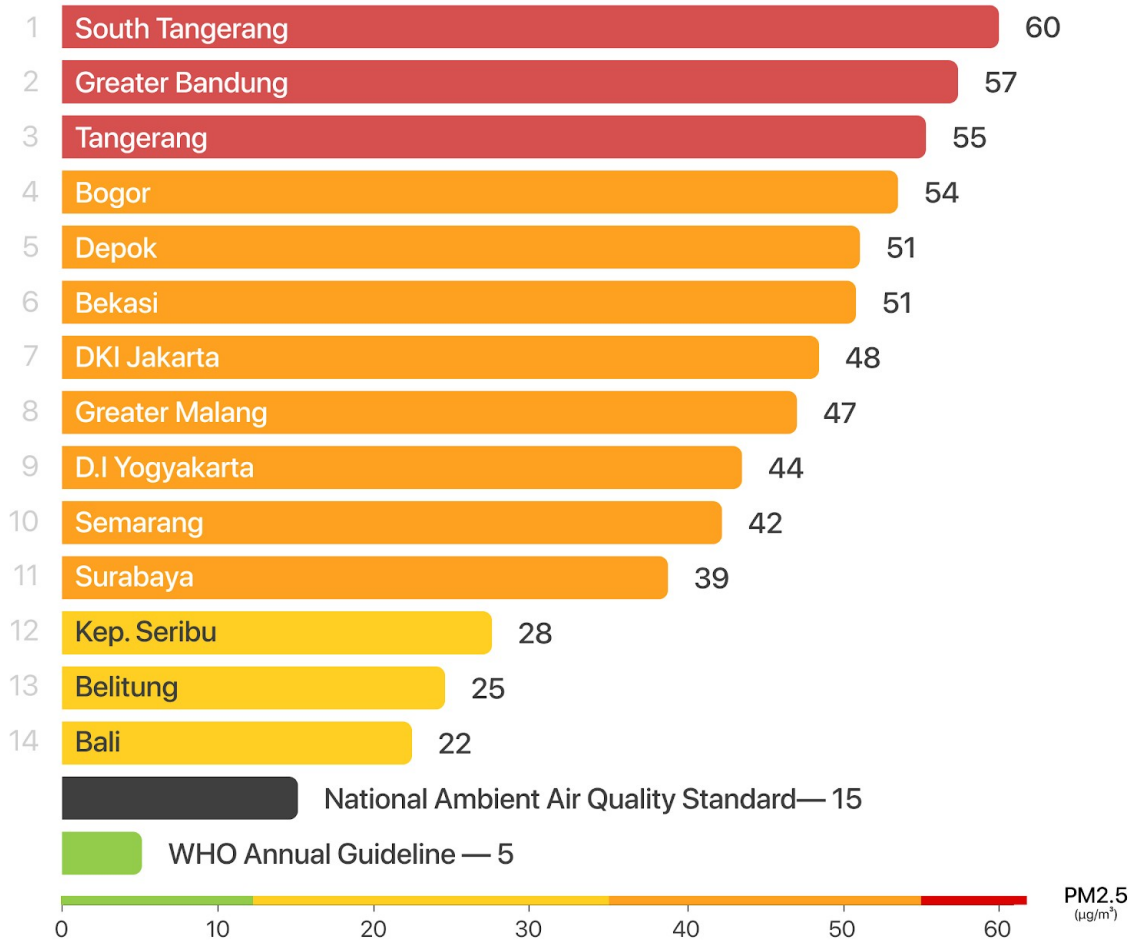
2021 - 2023



City Rankings

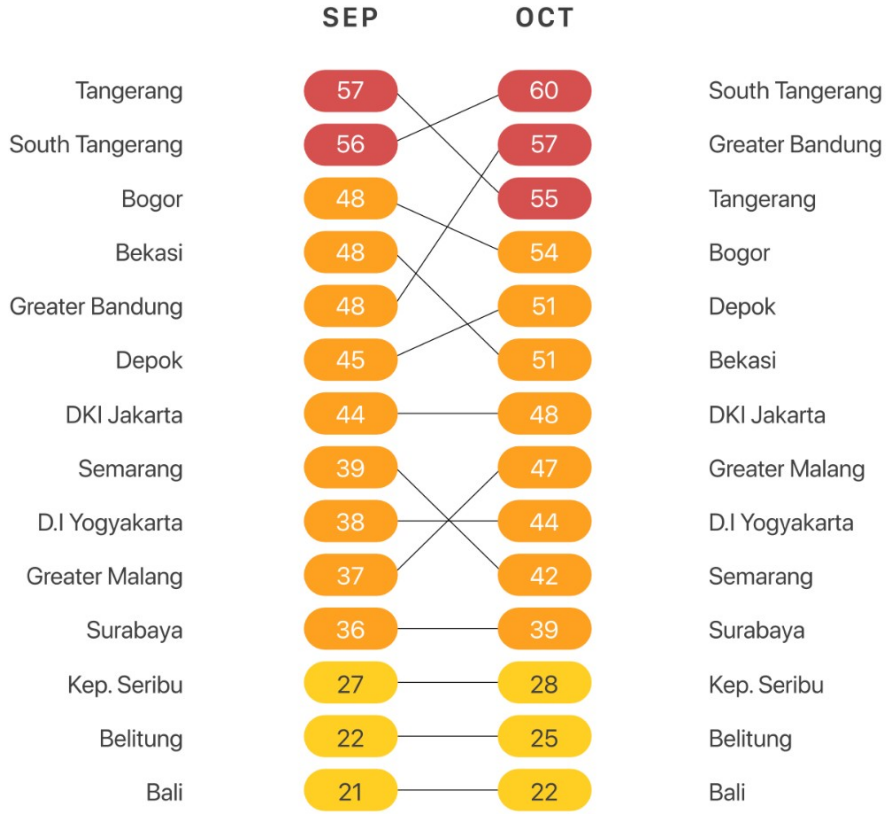
This ranking is determined by the cities with the highest PM2.5 concentration levels in October 2023.

- Good
- Moderate
- Unhealthy for Sensitive Group
- Unhealthy



City Rankings

This displays the rankings of cities based on their PM2.5 pollution levels, providing a comparison with the previous month's data.

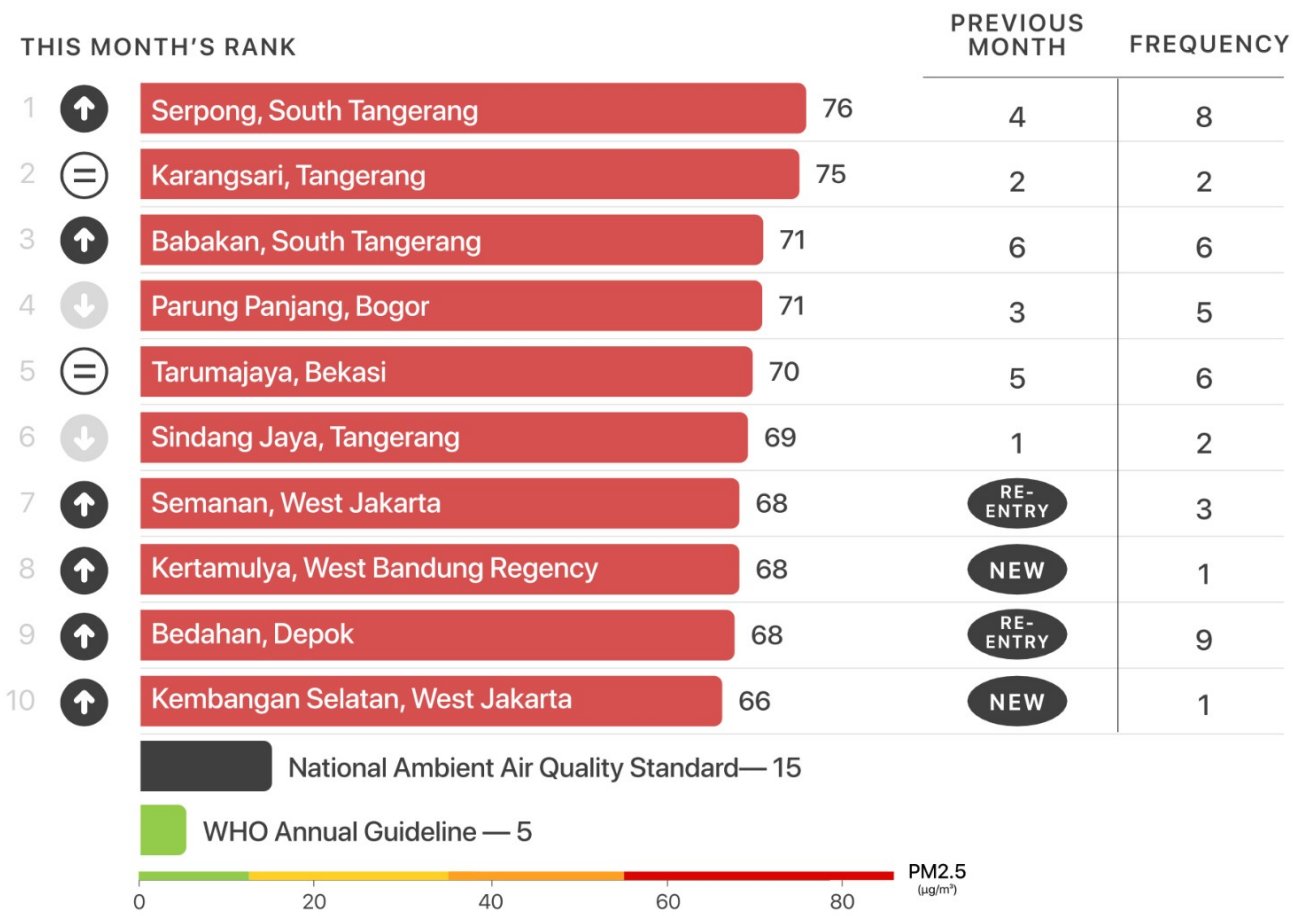


- Good
- Moderate
- Unhealthy for Sensitive Group
- Unhealthy

Top 10 Most Polluted Location

This ranking identifies the sensor points with the highest PM2.5 concentrations in October 2023 and compares them with the conditions from the previous month.

- Good
- Moderate
- Unhealthy for Sensitive Group
- Unhealthy



Cigarettes Equivalence

October 2023

The equivalence to cigarette smoke is determined by the daily average of PM2.5.

A concentration of 22 µg/m³ is equivalent to the exposure from one cigarette.

*) Measurement methodology is based on berkeleyearth.org

		NUMBER OF CIGARETTES
1	Serpong (TANGSEL)	107
2	Karangsari (TNG)	106
3	Babakan (TANGSEL)	100
4	Parung Panjang (BGR)	100
5	Tarumajaya (BKS)	98
6	Sindang Jaya (TNG)	98
7	Semanan (JAKBAR)	96
8	Kertamulya (BDG)	96
9	Bedahan (DPK)	96
10	Kembangan Selatan (JAKBAR)	93

30 Most Polluted Locations

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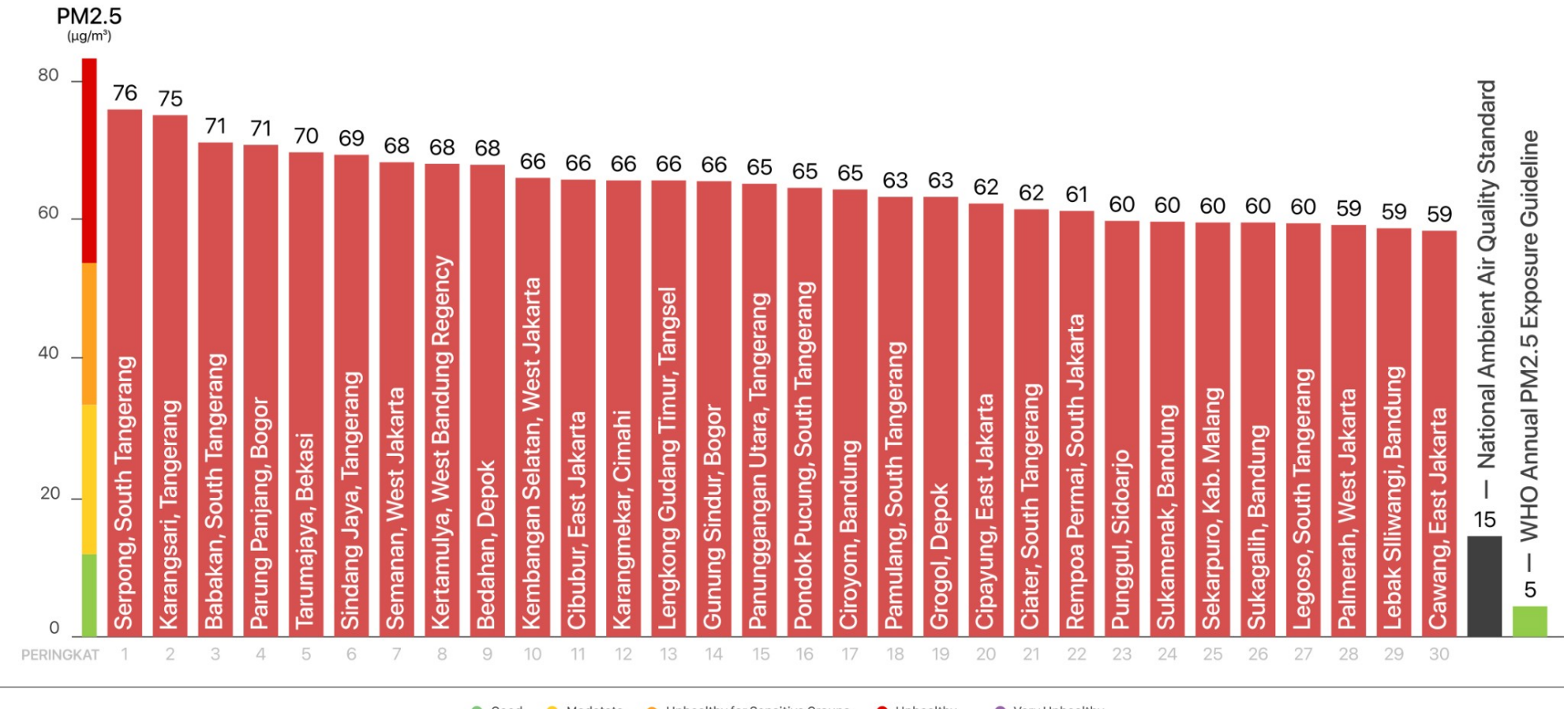
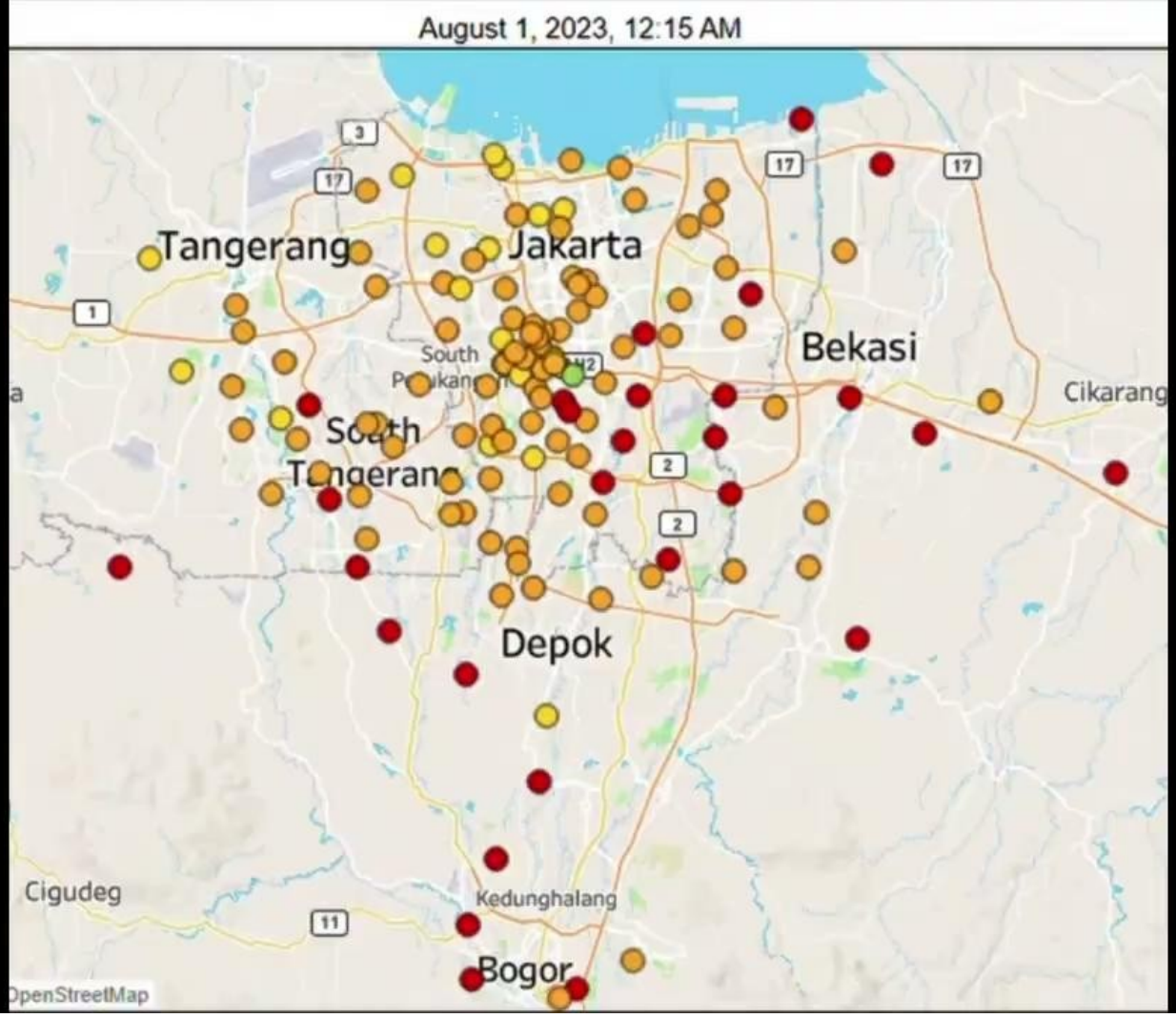


Good · Modetate · Unhealthy for Sensitive Groups · Unhealthy · Very Unhealthy


August 1, 2023, 12:15 AM
Tangerang
Jakarta
Bekasi
Cikarang
South
Depok
Cigudeg
Kedunghalang
Bogor
OpenStreetMap

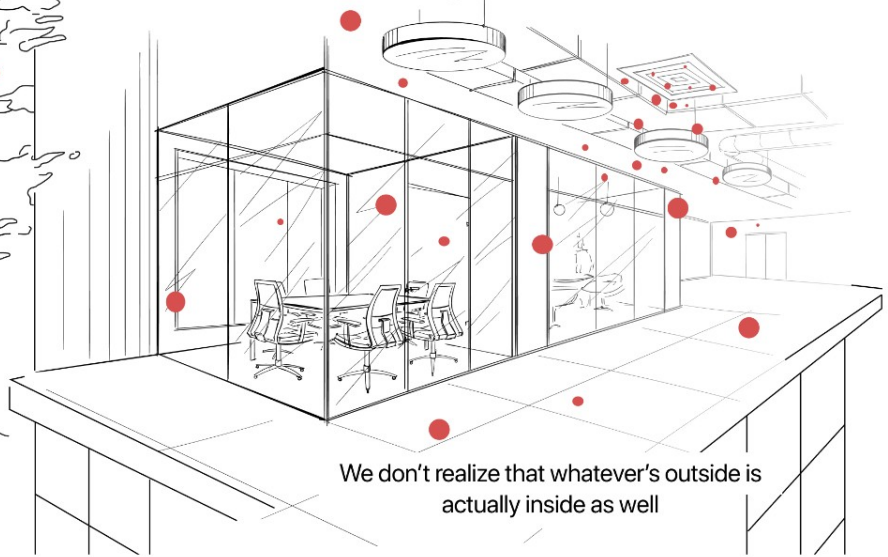
PROBLEM

Air pollution is a growing problem in Indonesia, both outdoors and indoors

Jakarta's outdoor pollution can be **20x above WHO guidelines**

Most of the planet's population is affected by excessive PM2.5 exposure

Up to 100% of outdoor pollution gets indoors



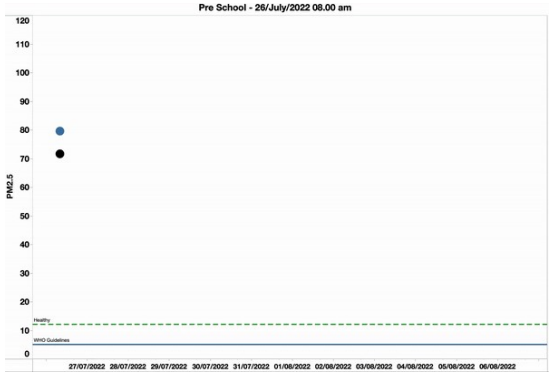
We don't realize that whatever's outside is actually inside as well

Air pollution: A bigger indoor problem

Nafas has identified that nearly 100% of outdoor pollution gets inside our buildings - offices, schools and residences

Office

Pre-School



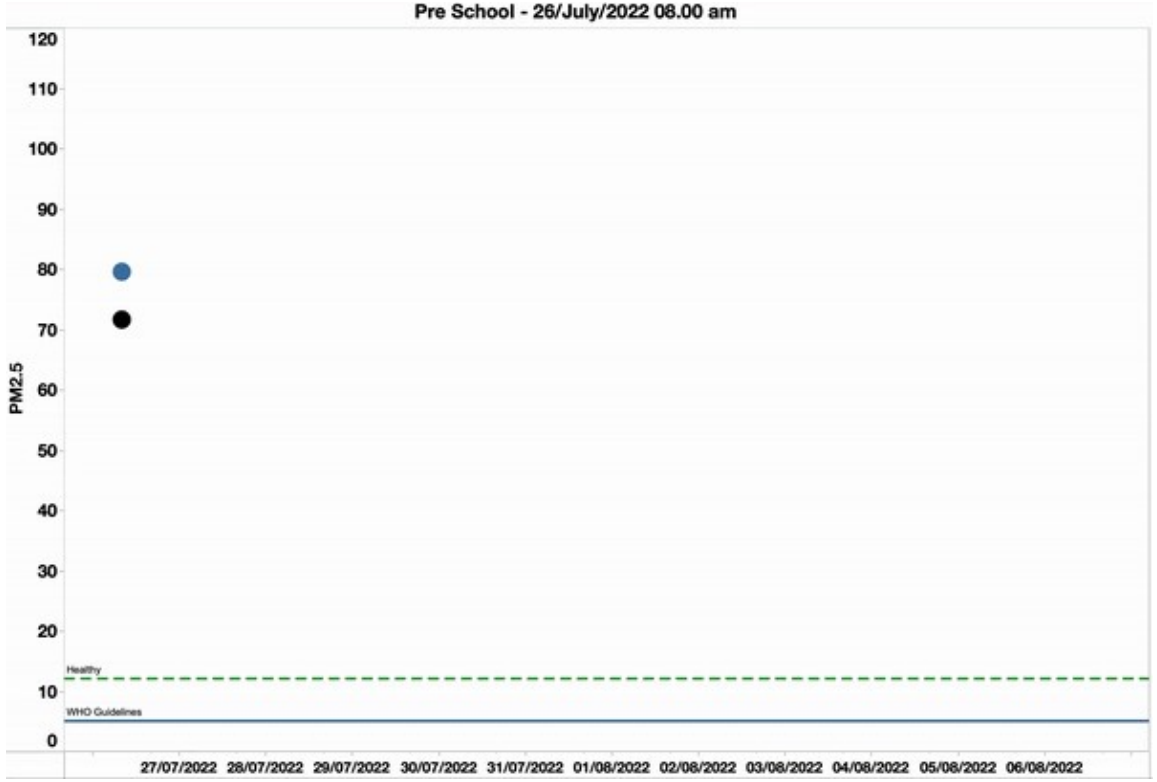
Apartment

Outdoor air quality and indoor air quality follow nearly identical trends - the following data is from RDTX Tower, Mighty Minds Pre-School and Dharmawangsa Residence.

This means that when pollution is high outside, it’s very highly likely high inside too.

Air pollution: A bigger indoor problem

Nafas has identified that nearly 100% of outdoor pollution gets inside our buildings - offices, schools and residences

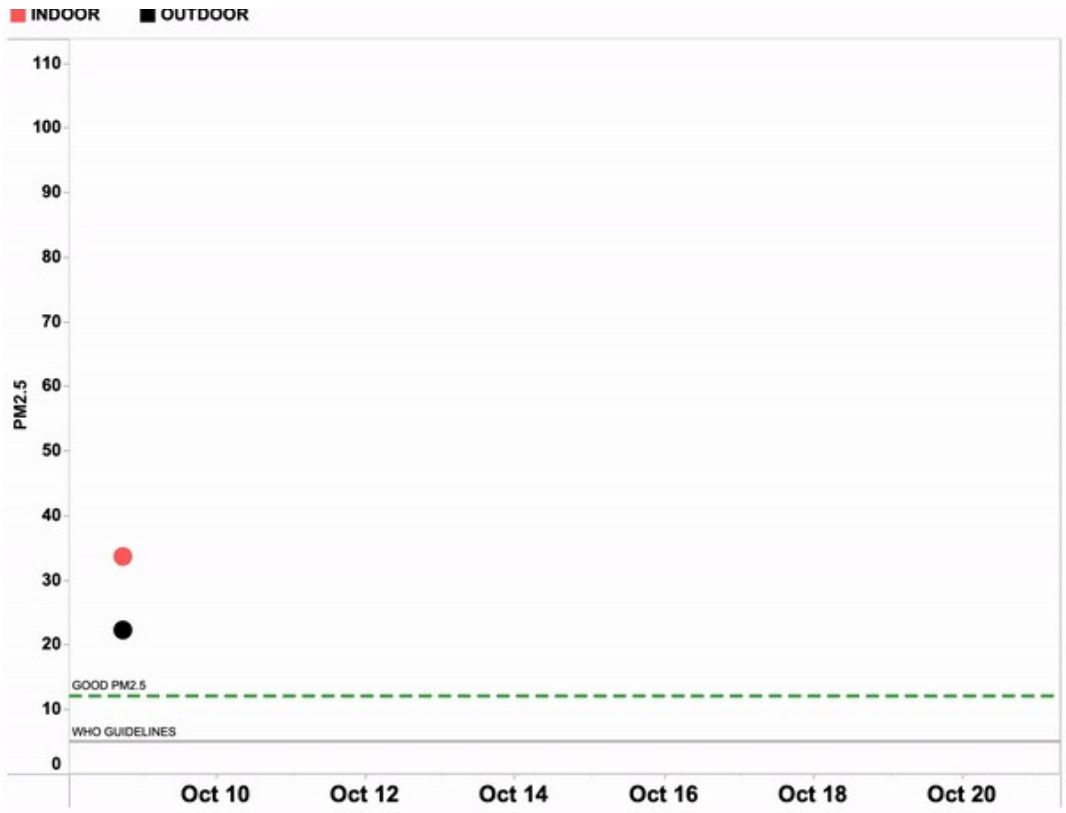


HT2 Studio 6

Outdoor

Air pollution: A bigger indoor problem

Nafas has identified that nearly 100% of outdoor pollution gets inside our buildings - offices, schools and residences

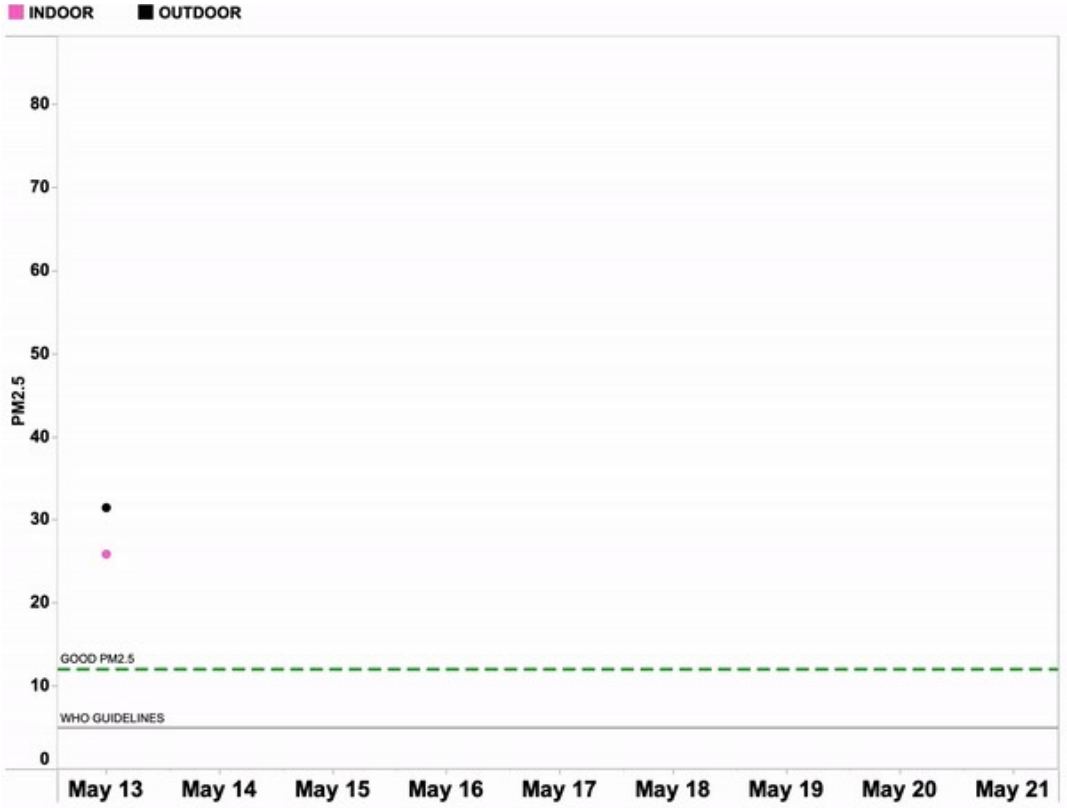


HT2 Studio 6

Outdoor

Air pollution: A bigger indoor problem

Nafas has identified that nearly 100% of outdoor pollution gets inside our buildings - offices, schools and residences



Office

Outdoor

Air pollution: A bigger indoor problem

Nafas has identified that nearly 100% of outdoor pollution gets inside our buildings - offices, schools and residences

Indoor

Outdoor

The impact of PM2.5 pollution goes beyond health and into human cognitive performance - as discovered by Harvard

6%

Increase in Absenteeism

For every 10 µg/m3 increase of PM2.5 above 15 µg/m3

26.6

working hours lost

For every 1 µg/m3 increase of PM2.5

4/5

cognitive tests failed

Slower response times and worse accuracy for office workers at PM2.5 above 12 µg/m3

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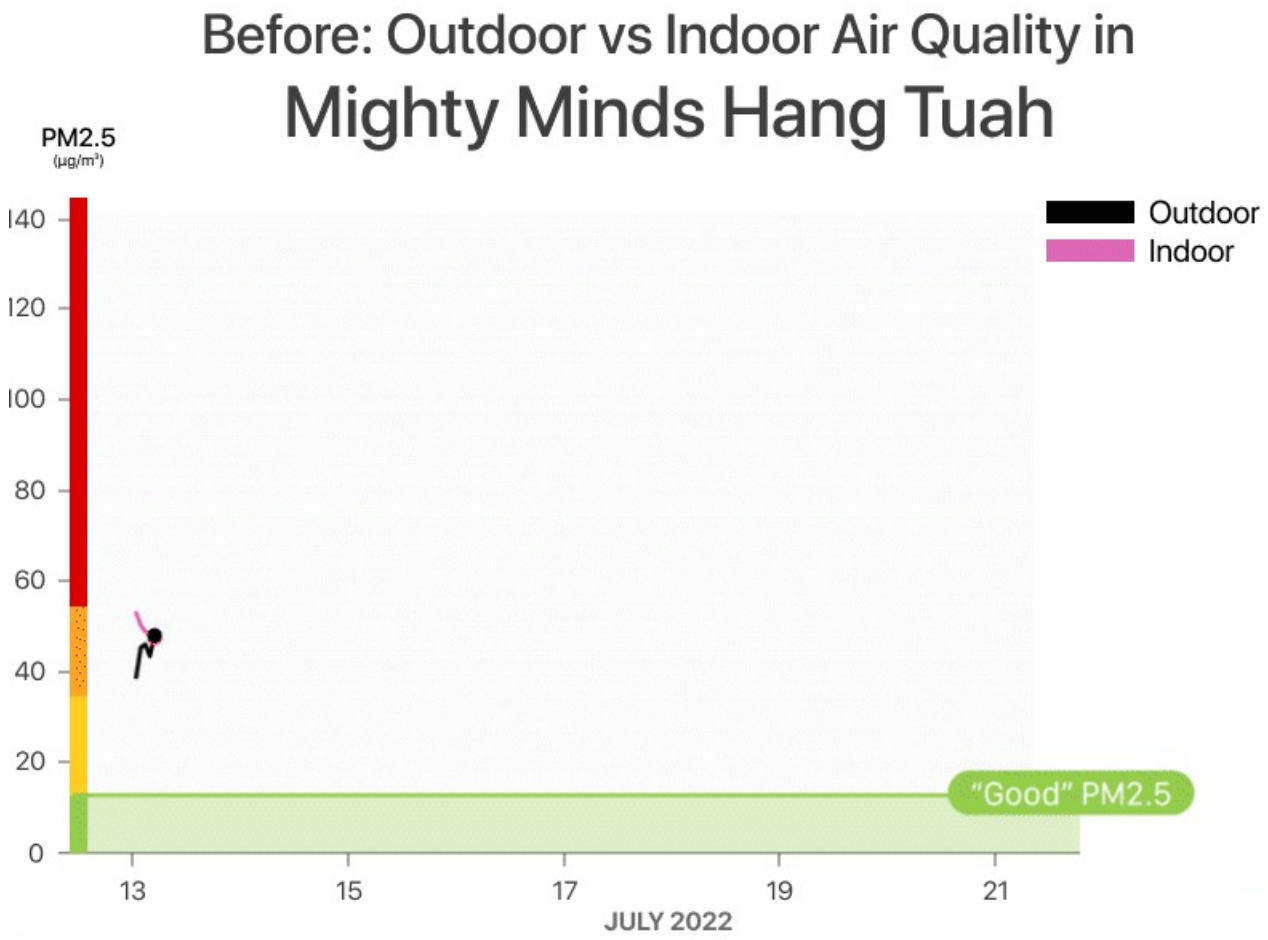
Almost 100% of outdoor pollution gets inside



- Baik
- Moderat
- Tidak Sehat Bagi Kelompok Sensitif
- Tidak Sehat
- Sangat Tidak Sehat
- Beracun

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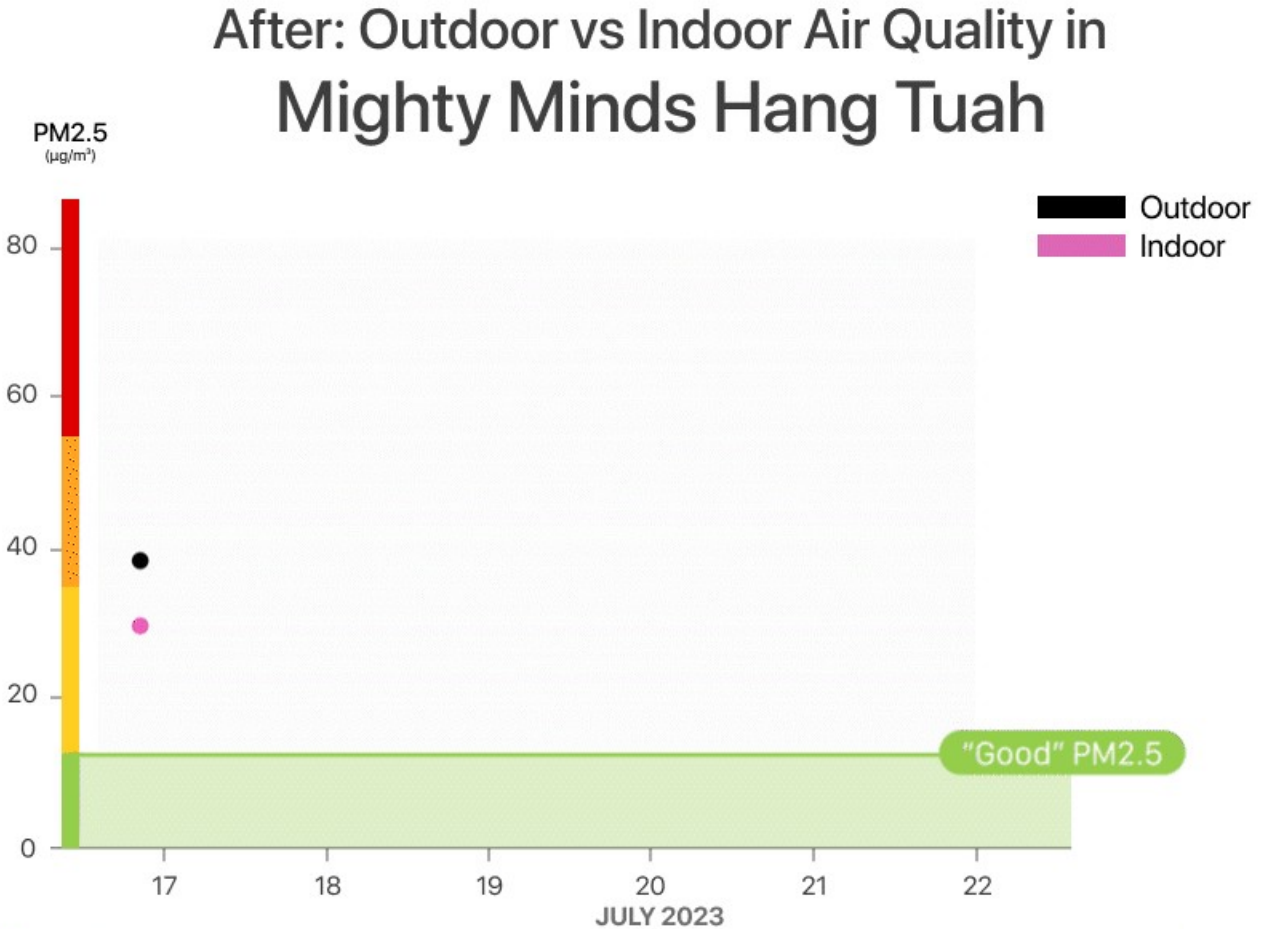
Indoors we have full control over air quality conditions and the largest chance to impact human health



- Baik
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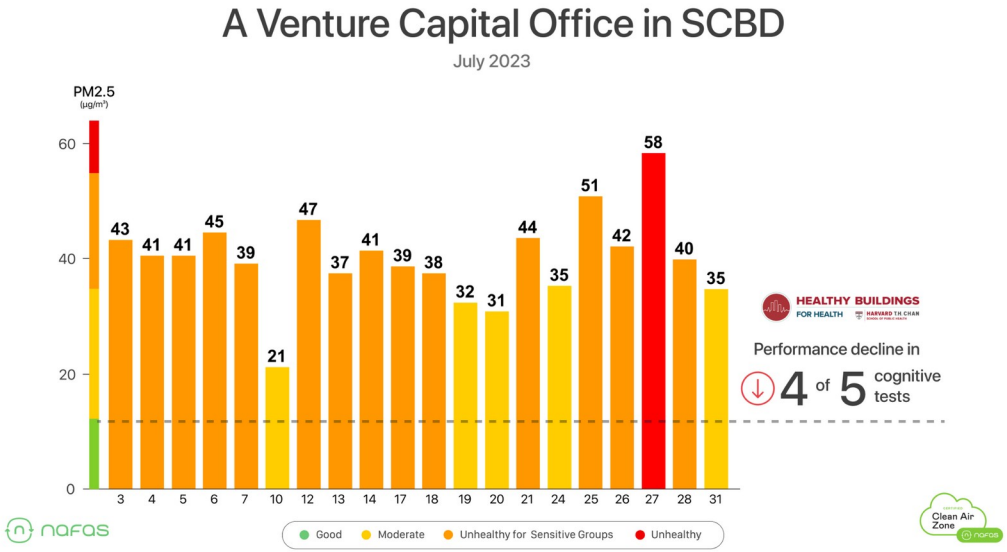
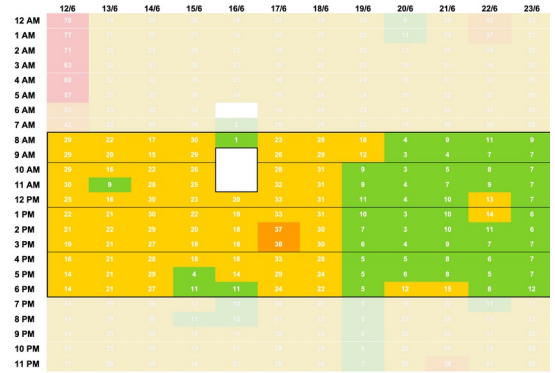
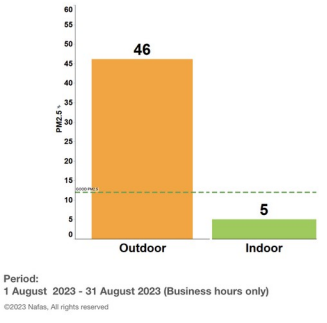
Indoor Health & Safety

Air quality data transparency is critical to ensuring the health & safety of employees, staff and families that are living in Jakarta







Indoor Health & Safety

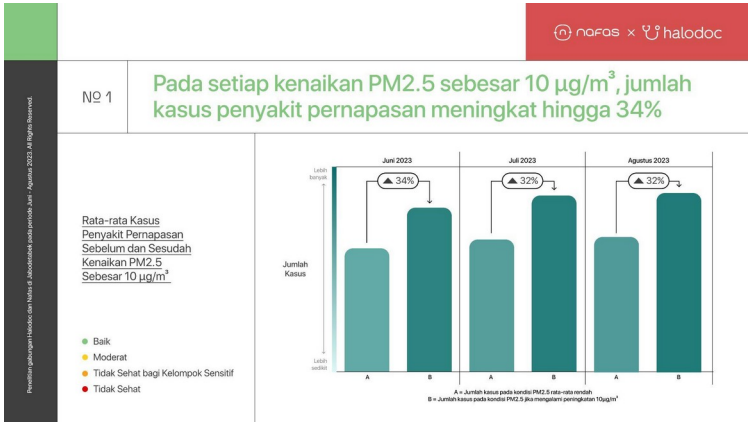
Air quality data transparency is critical to ensuring the health & safety of employees, staff and families that are living in Jakarta

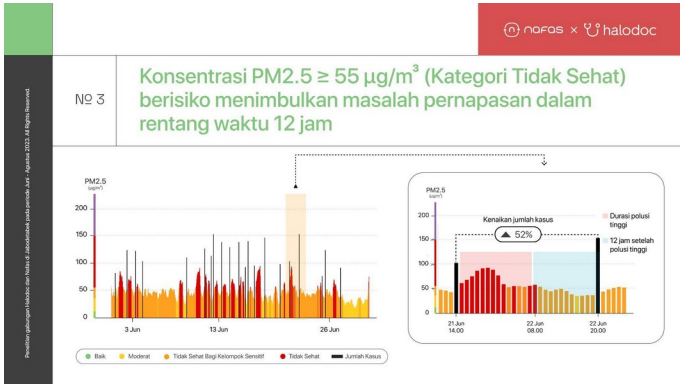
Without Filtration District 8

With Filtration District 8

Nafas x Halodoc Health Study

Each time PM2.5 in Jabodetabek increased by 10 ug/m3, number of teleconsultations on Halodoc would increase up to 34% within 48 hours





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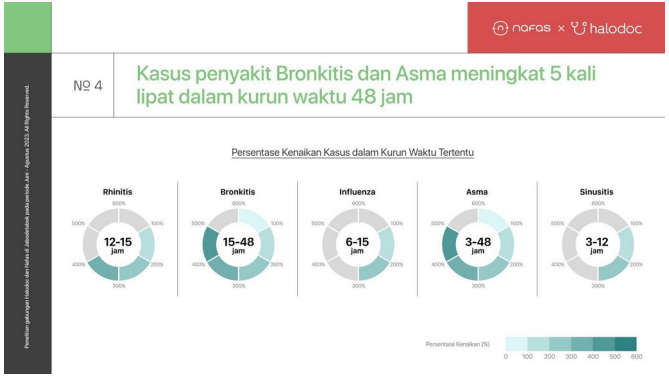

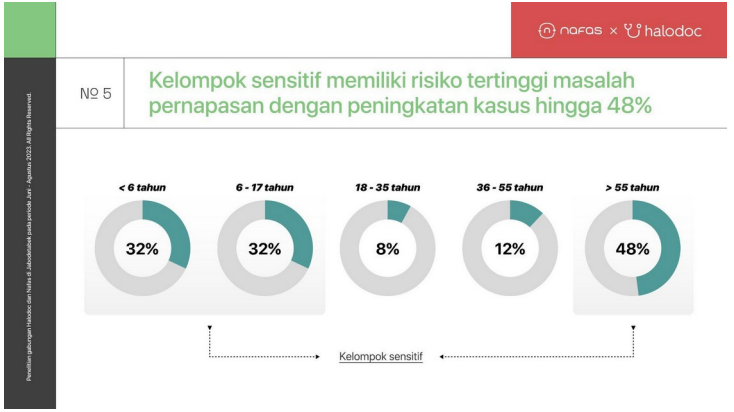

Thank You