WHO's work to improve air quality, energy access & health

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World Health Organization

World is falling short of achieving SDG 3, 7 & 11

Impacts:

➢ Exposure to ambient & household air pollution is responsible for
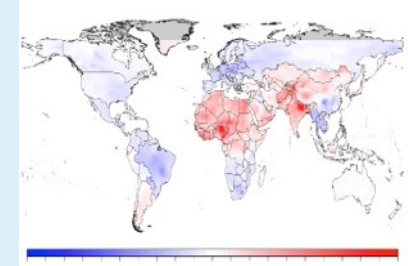
   7 million deaths annually

of these

   5 million are due to NCD's

(16% of all NCD deaths between the ages of 30 and 69 years old)

Health Determinants:

Ambient air pollution

Household air pollution

Electricity in healthcare facilities

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➢ Air pollution is the second leading cause of deaths from noncommunicable diseases (NCDs), after tobacco-smoking.

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Clean ambient & household air contributes to WHO's Healthier Populations

Figure 5.6. Expected number of Healthier Lives if GPW13 milestones are met

Healthier Lives indicators	No of Lives improved if GPW target met (millions)
Safe water	1,000
Safe sanitation	800
Tobacco use	224
Ambient air pollution*	180
Clean Household fuels*	73
Road injuries/deaths	39
Obesity*	26
Alcohol use	36
Childhood wasting <5	13
Childhood stunting <5	19

Source: Proposed methods for the 13th General Programme of Work (GPW13), WHO Impact Framework, DRAFT VERSION 0.8, 15 Aug 2019

| SDG	Indicator	2023 GPW Aspiration*	WHO Contribution	Operational planning targets (2020-21)
SDG 3.9.1	Mortality to AAP & HAP	Reduce mortality rate by 5% - saving 180 million lives	-# of countries working towards achieving WHO AQ guidelines	SDG monitoring (Target 3.9, 7.1 and 11.6)

3 Global Public Health Goods on monitoring, norms and interventions

Technical Support requested by 23+ countries

Leadership: Provide evidence & policy guidance to global, regional and national platforms – convening power |
| SDG 7.1.2 | Primary reliance on clean fuels & tech for cooking | Provide access to clean cooking – saving 73 million lives | #of countries implementing WHO Guidelines for Indoor Air Quality; WHO led Health & Energy Platform of Action | |
| SDG 11.6.1 | Ambient air quality in cities | No target, achievements measured in relation to WHO AQ guidelines | # countries working towards achieving WHO AQ guidelines | |

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Scope of the air quality, energy and health activities

Household air pollution

Using the 'health argument' to accelerate the transition to clean household energy
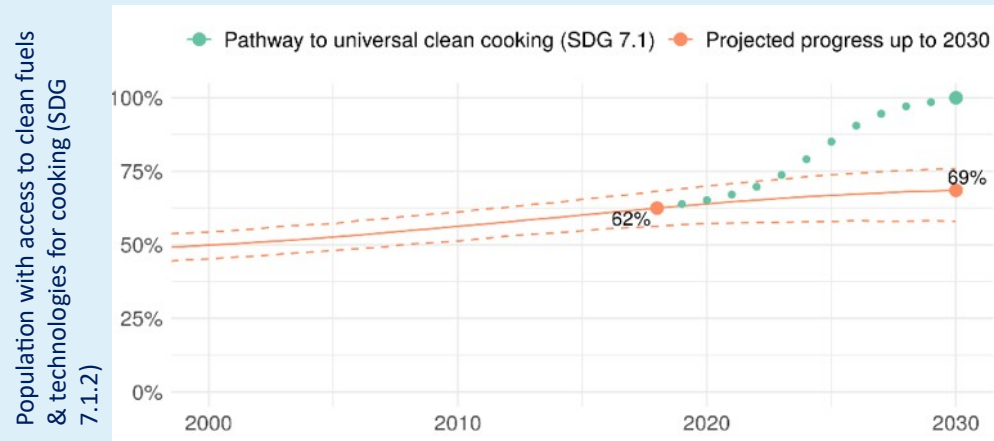
The access gap that enhanced cooperation between Health & Energy aim to achieve **SDG 3, 7 & 11**

3 GOOD HEALTH AND WELL-BEING

7 AFFORDABLE AND CLEAN ENERGY

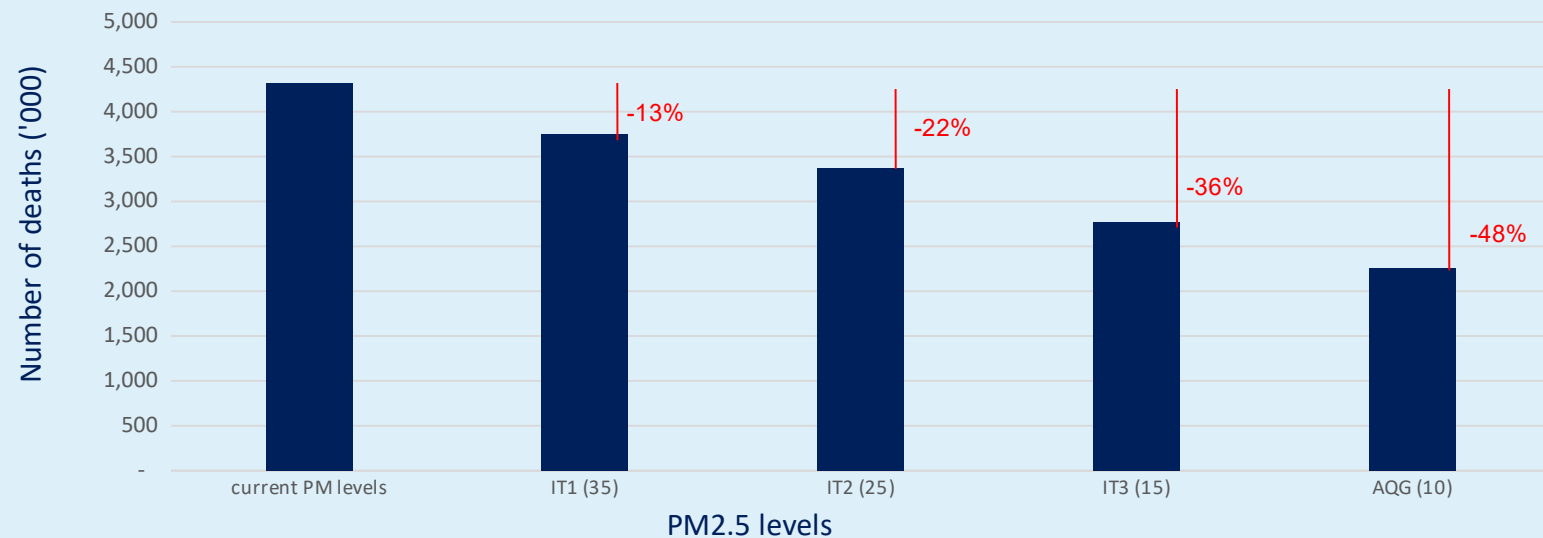11 SUSTAINABLE CITIES AND COMMUNITIES

Ambient air pollution

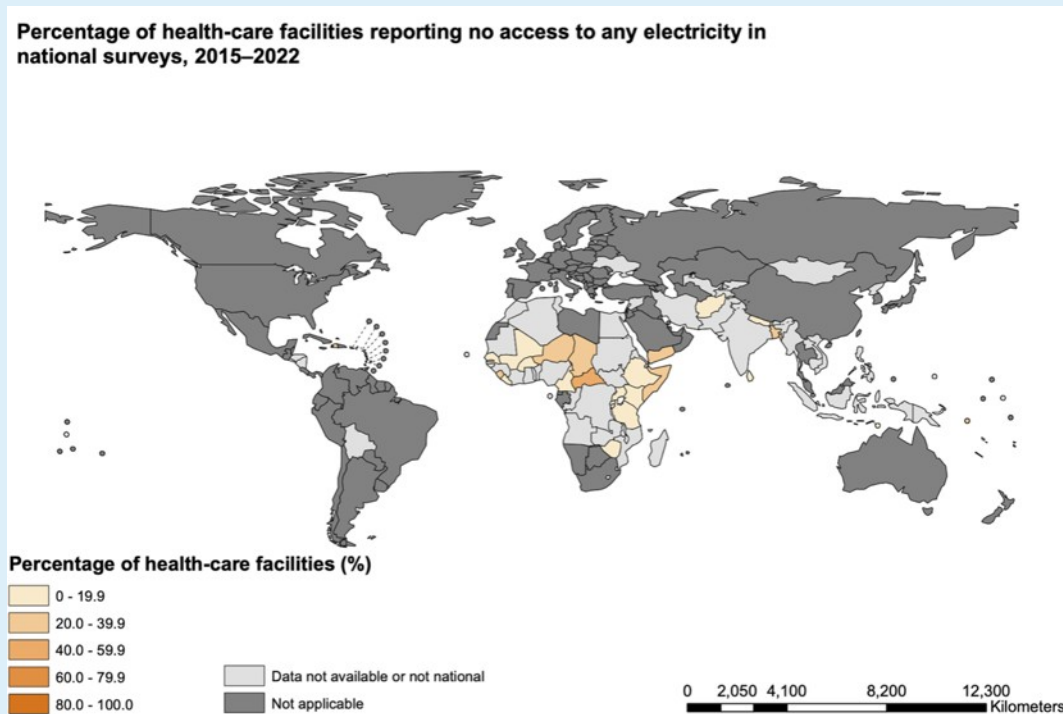Achieving the WHO Air Quality Guidelines or Interim Targets would save lives

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Scope of the air quality, energy and health activities

Lack of access to reliable electricity in health care facilities prevents both disease treatment & prevention

Health facilities with reliable electricity %

Percentage of health-care facilities reporting no access to any electricity in national surveys, 2015–2022

Percentage of health-care facilities (%)
- 0 - 19.9
- 20.0 - 39.9
- 40.0 - 59.9
- 60.0 - 79.9
- 80.0 - 100.0

Data not available or not national

Not applicable

0   2,050 4,100   8,200   12,300
                                     Kilometers

- Clean, sustainable electricity and energy-efficient medical devices in healthcare facilities is critical to disease prevention and treatment as well as drive progress towards the Sustainable Development Goals.

- Providing health care facilities with renewable electricity minimizes the need to rely on polluting energy sources like diesel generators, cutting costs but at the same time cleaning up the air in and around the facility

- Renewable electricity can also help build the resiliency of the health care facility for service delivery in the face of climate change.

Clean air and energy access for healthier populations and universal health coverage

Knowledge, Evidence & Measuring Progress

Institutional Capacity Building & Technical Support

Leadership & Coordination

WHO Strategic Approach for Air Quality, Energy Access and Health

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Air Quality, Energy & Health Unit

Vision: Clean air and energy access for healthier populations and universal health coverage

Overall objective: Protect public health through evidence-based actions to improve air quality and ensure access to clean, sustainable energy solutions

Areas	KNOWLEDGE, EVIDENCE & MEASURING PROGRESS	INSTITUTIONAL CAPACITY-BUILDING & TECHNICAL SUPPORT	LEADERSHIP & COORDINATION
Statement	**Provide the evidence base and collect data to inform policies and programmes** *"What we know, what we don't know and where we are"*	**Develop tools and resources, and support their application in countries, to translate the evidence into policies and actions** *"How best to do it"*	**Promote health leadership and facilitate multi-sectoral coordination to accelerate action** *"Lead and steer"*
Actions	1. Synthesize evidence to inform policy 2. Develop normative recommendations and guidance 3. Establish baseline and measure progress	1. Inform the development of regulatory frameworks 2. Planning and implementation of interventions 3. Train and educate health and other sectors	1. Convene interdisciplinary expert groups 2. Promote cross-sectoral and interagency collaboration 3. Leverage health argument for scaling-up actions
Outputs	1. Publicly available databases 2. Technical reports of analyses [5] 3. Synthetized knowledge 4. Norms and guidelines 5. Reports on tracking progress 6. Methods and protocols	1. Health workforce curricula and training 2. Tools and calculators for situational assessment 3. Methods for evaluation of interventions and monitoring 4. Guidance for policy development, regulatory mechanisms and programme implementation	1. WHO-led expert working groups 2. Political commitment via WHO-led high-level coalitions and country engagement 3. Multi-partner initiatives and collaborative efforts 4. Joint technical activities with non-communicable diseases, maternal and child health, water and sanitation, and climate change agendas 5. Science communication and advocacy products
Outcome	The evidence base on air pollution and lack of energy access is comprehensive, up-to-date and available to inform decision making, and monitor progress	Country stakeholders are equipped with knowledge, skills and capacity on energy access and air quality to implement evidence-based actions in policies and healthcare delivery	Health, air quality and energy access is recognized and systematically integrated into the global development agenda to drive sectoral planning and actions

Knowledge, Evidence and Measuring Progress

Provide the evidence base and collect data to inform policies and programmes

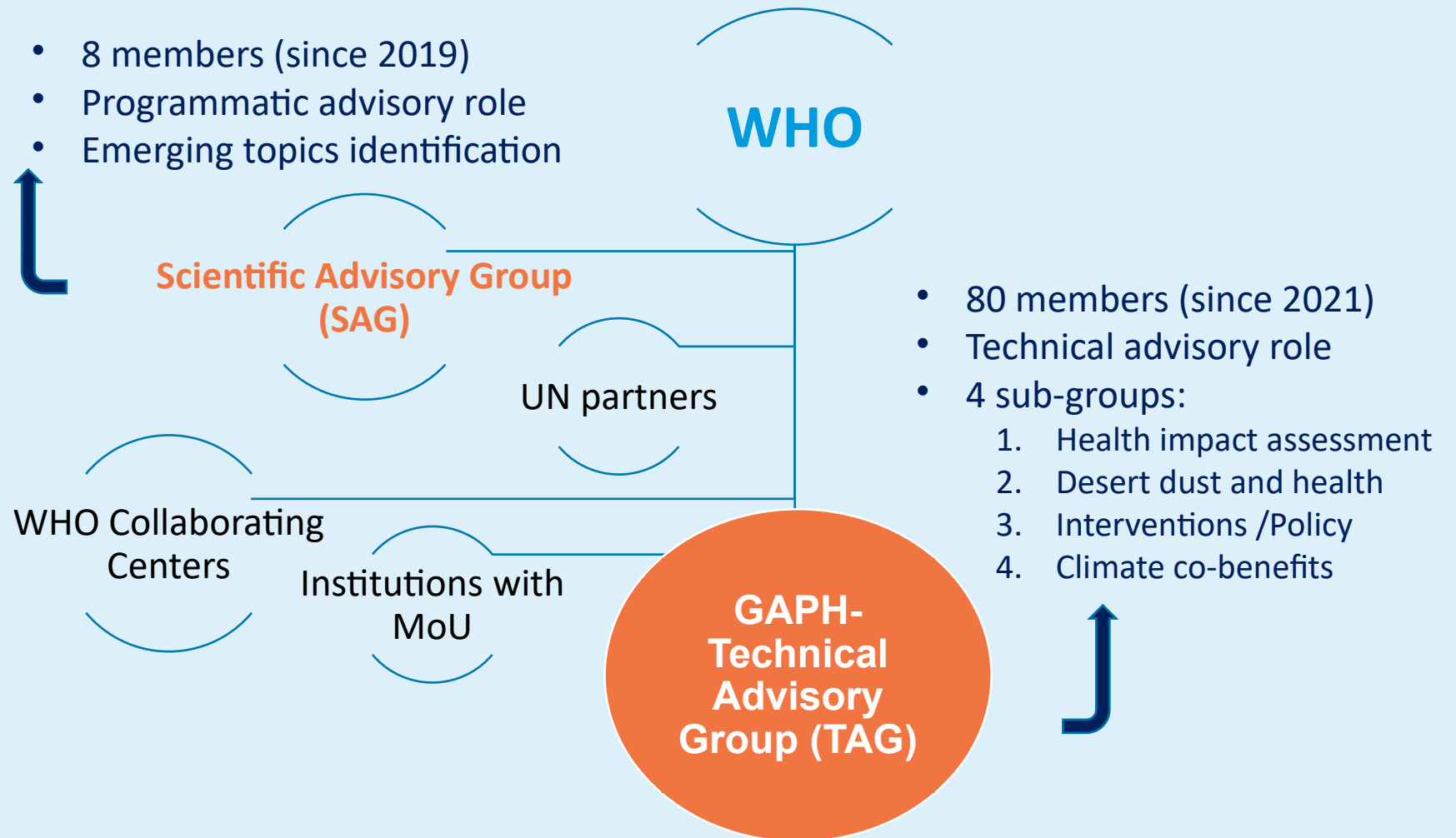***"What we know, what we don't know and where we are"***

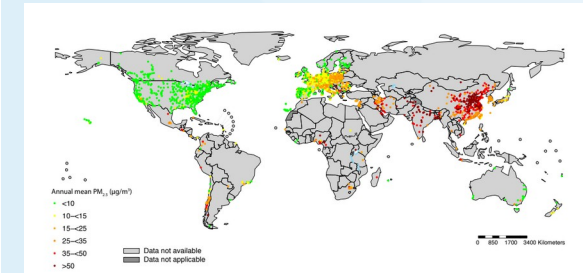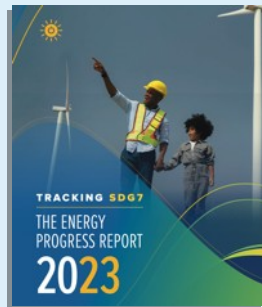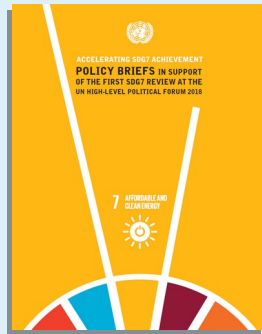| Synthesize evidence to inform policy	Develop of Normative Recommendations & Guidance	Establish baseline and measure progress
1. *Inform* 2. *Develop air quality guidelines & support translation to air quality standards with benchmarks* 3. *Establish baseline & monitoring change*	1. *Technical reports* 2. *Publicly available data* 3. *Methods & protocols* 4. *Reports on Progress* 5. *Methods & Protocols*	• *WHO Air Quality Guidelines* • *WHO Air Quality and energy access databases* • *SDG 7 Tracking Progress Report* • *Household Energy Policy Repository* • *Report on child health & air pollution (forthcoming)*

Evidence base on air pollution and energy access is comprehensive, up to date, and publicly available to inform decision-making and monitor progress

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Air pollution risk factor for NCDs Synthesizing evidence & building knowledge
Establishment of expert advisory groups on air pollution and health

- 8 members (since 2019)
- Programmatic advisory role
- Emerging topics identification

WHO

Scientific Advisory Group (SAG)

UN partners

WHO Collaborating Centers

Institutions with MoU

GAPH- Technical Advisory Group (TAG)

- 80 members (since 2021)
- Technical advisory role
- 4 sub-groups:
    1. Health impact assessment
    2. Desert dust and health
   3. Interventions /Policy
    4. Climate co-benefits

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Monitoring and reporting:
Global recognition of air pollution as an indicator for tracking progress on health

Air pollution and Sustainable Development Goals (SDG)

SDG 7.1.2: Percentage of population with primary reliance on clean fuels and technologies at the household level

SDG 11.6.2: Annual urban mean concentration of particulate matter (PM2.5), population-weighted

Mortality from household air pollution

Mortality from ambient air pollution

SDG 3.9.1: Mortality from air pollution

WHO custodial agency for these 3 indicators

Number of cities and towns with PM10 and/or PM2.5 measurements in the WHO air quality database: 1100 (2011), 4300 (2018), over 6000 (2022)
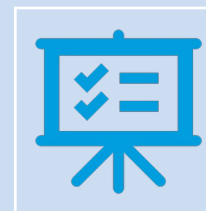
WHO Global Air Quality Guidelines
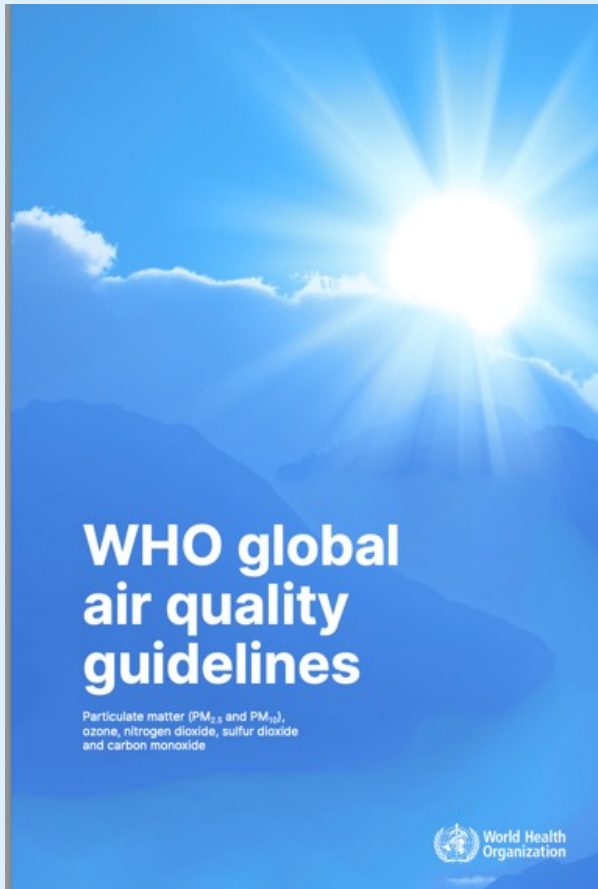
- Since the last 2005 global update, there has been a marked **increase in the quality and quantity of evidence** that shows how air pollution affects different aspects of health.

- There are also now clearer insights about sources of emissions and the contribution of air pollutants to the global burden of disease.

- For that reason, and after a systematic review of the accumulated evidence, **several of the updated AQG levels are now lower than 15 years ago.**

- New features include new AQG levels for peak-season O_3 and 24-h NO_2 and CO, as well as new interim targets.

What the AQGs provide...

Summary of recommended AQG levels and interim targets

Pollutant	Averaging time	IT1	IT2	IT3	IT4	AQG level
$PM_{2.5}$, µg/m³	Annual	35	25	15	*10*	5
$PM_{2.5}$, µg/m³	24-hour[a]	75	50	37.5	*25*	15
PM_{10}, µg/m³	Annual	70	50	30	*20*	15
PM_{10}, µg/m³	24-hour[a]	150	100	75	*50*	45
O_3, µg/m³	Peak season[b]	100	70	–	–	60
O_3, µg/m³	8-hour[a]	160	120	–	–	100
NO_2, µg/m³	Annual	*40*	30	20	–	10
NO_2, µg/m³	24-hour[a]	120	50	–	–	25
SO_2, µg/m³	24-hour[a]	125	50	–	–	40
CO, mg/m³	24-hour[a]	7	–	–	–	4

Air quality guideline levels for both long- and short-term exposure in relation to critical health outcomes.

Interim targets to guide reduction efforts for the achievement of the air quality guideline levels.

Good practice statements in the management of certain types of particulate matter for which evidence is insufficient to derive quantitative air quality guideline levels, but points to their health relevance.

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How can the AQGs be used?

AS AN EVIDENCE-INFORMED TOOL

The AQGs are an evidence-informed tool for decision-makers to guide legislation and policies, to reduce levels of air pollutants and decrease the health burden that results from air pollution exposure worldwide.

Everybody has a role to play

TO STIMULATE RESEARCH

Air pollution researchers and academics can use it to help identify critical data gaps that future research agendas could address to better protect the population from the harmful effects of air pollution.

FOR CLIMATE ACTION

Efforts to improve air quality can enhance climate change mitigation, and climate change mitigation efforts can, in turn, improve air quality. All this enhance people's health.

AQGs are a power tool for climate action

Institutional Capacity-building & Technical Support

Develop tools and resources, and support their application in countries, to translate the evidence into policies and actions

"How best to do it"

Inform the development of regulatory frameworks	Planning and implementation of interventions	Train and educate health and other sectors
1. Inform the development of regulatory mechanisms 2. Planning & implementation of policies 3. Train and educate health and other professionals	1. Health workforce & curricula 2. Tools and calculators for situational assessments 3. Methods for health impact assessments and monitoring intervention impacts 4. Guidance for policy development, regulatory mechanisms & programme implementation	• Clean Household Energy Solutions Toolkit (CHEST) • Air Pollution and health training toolkit for health workers (APHT) • HEAT • AirQ+ • CLIMAQ-H • GreenUR

Country stakeholders are equipped with the knowledge, skills and capacity on energy access & air quality to implement evidence-base actions in policies & health care delivery

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WHO Toolkit to support countries in identifying and implementing clean household energy solutions

Providing tools to develop appropriate environmental policies to protect public health

In collaboration with different WHO Regions, development and adaptation of tools that have a strong quantitative component, but also offer the possibility to follow decision-making processes in different phases

Offer tools that fit different purposes: Capacity building, Decision-making, Education, Producing estimates, Training

- **HEAT**

Health economic assessment tool for walking and for cycling

- **AIRQ+**

Software tool for health risk assessment of air pollution

- **CLIMAQ-H (former CarbonH)**

Achieving health benefits from carbon reductions

- **GreenUr**

Green spaces and health tool

Tailor and adapt tools for analysis at different scales, including urban and rural areas in LMI countries

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Air pollution and health training toolkit for health workers (APHT)

Developed in collaboration with +50 experts from Governmental agencies, WHO Collaborating Centres, Non-State Actors including environmental health and medical associations, as well as academic institutions.

Info at:

https://www.who.int/tools/air-pollution-and-health-training-toolkit-for-health-workers
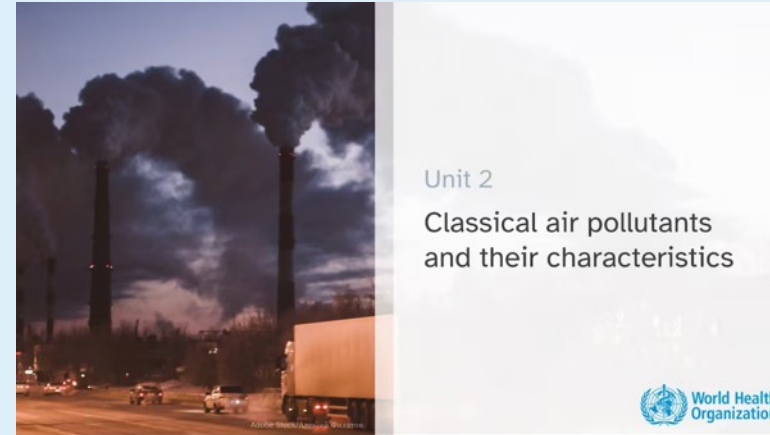
Training toolkit: a snapshot

- **Training modules**

- **Training-the-trainers** manual

- **Clinical case scenarios** on air pollution and health

- **Job aids and flipcharts** for community engagement

- Pilot workshop in Ghana (June 2022)

- Launch of the training toolkit by the end of 2023

- **OpenWHO course**
  "Air pollution and health: an introduction for health workers"
  (*launched on 7 September 2023, International Day for Clean Air and Blue Skies 2023*)

Promote health leadership and facilitate multi-sectoral coordination to accelerate action

"Lead and steer"

Convene Interdisciplinary Expert Groups	Promote Cross-sectoral & Interagency Collaboration	Leverage 'Health Argument' For Scaling-up Actions
1. Convene interdisciplinary expert groups 2. Promote multisectoral cooperation and interagency cooperation 3. Leverage 'health' argument for action	1. WHO-led interdisciplinary expert groups 2. Political commitment via WHO-led high-level coalitions & country engagements 3. Multi-partner initiatives & collaborative efforts\ 4. Joint technical activities with NCDs, MCH, climate change, WSH, etc.	• WHO Air Quality & Energy Access Conference (expected Q4 2024 • Breathe Life Campaign • High-level Coalition on Health & Energy • World Health Assembly Resolution (WHA 68.8) & related road maps

Health, air quality and energy access is recognized and systematically integrated in the global developmental agenda to drive sectoral planning and actions

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Multi-sectoral Action to address AP:

Urban Health Initiative in Kathmandu, Nepal

Kathmandu Valley, which includes the capital city Kathmandu and 17 other municipalities, is especially vulnerable to air pollution due to its natural conditions, such as bowl-shaped topography, limited wind flow and long dry season, as well as rapid and haphazard urbanization.

It is estimated that Nepal lost **42,100 lives** and over 1.2 million DALYs due to air pollution in 2019. Of these, 17,900 deaths were caused by ambient particle pollution or PM2.5 while 6,030 was attributed to ozone pollution and 21,600 were attributed to household air pollution from solid fuels

Table 2: Health impacts of Changes in Emission under Different Scenarios

Sectors	Averted deaths due to changes in emissions	Scenarios	
		Business as usual	Aggressively Progressive
Transport	All-cause mortality	13,680	50,213
	Cause-specific mortality	3,091	14,511
Industry	All-cause mortality	15	44
Household	All-cause mortality	N/A	N/A
	Cause-specific mortality	1020	3745
Solid waste	All-cause mortality	0	43
	Cause-specific mortality	0	50
Total	**All-cause mortality**	**13,695**	**50,300**

Source: KU/WHO (2020)

"We have to look at everything in an interconnected way. For example, improving roads lead to landfill sites can improve air quality. Citizens resort to burning waste during monsoons when civic staff is unable to collect garbage… This practice is a major cause of rising air pollution in Kathmandu, which is a threat to public health. We strive for our plans and initiatives to reflect this complexity."

Bidya Sundar Shakya, Mayor of Kathmandu, Nepal

Nepal's actions

- First South-East Asian city to pilot the Urban Health Initiative

- Adoption of Kathmandu Valley Air Quality Management Action Plan (KVAQMAP), 2020

- Kathmandu together with Lalitpur became first BreatheLife member in Nepal

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Health and Energy Platform of Action (HEPA)

- Mobilize political & financial commitment
  ➢ *the High-Level Coalition on Health and Energy*

- Promote the development of country implementation road maps

- Demonstrate leadership

- Conduct advocacy and outreach

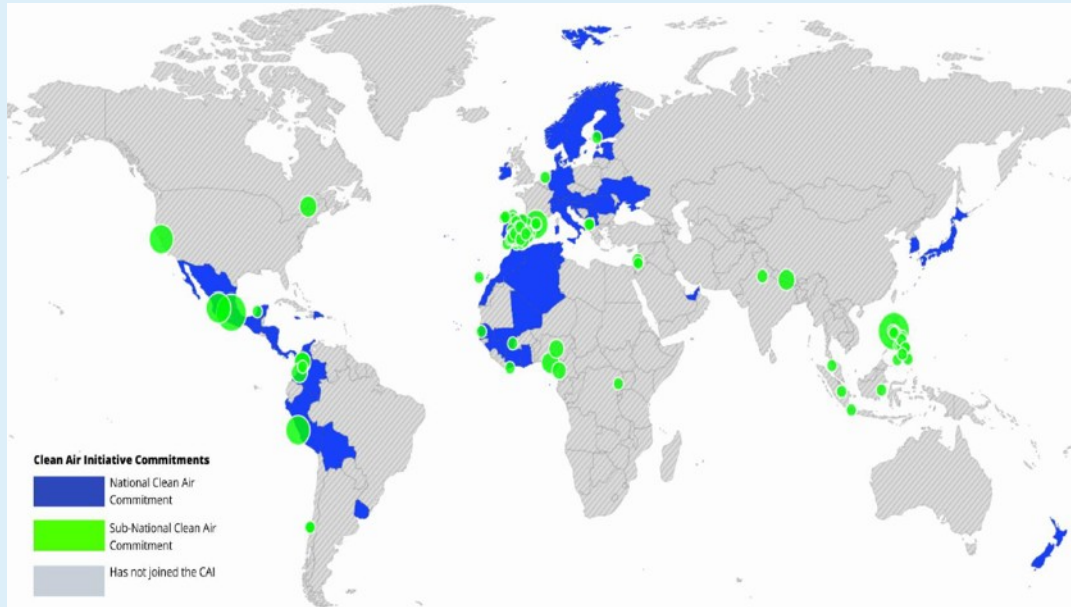- Promote an interdisciplinary approach

Health and Energy
Platform of Action

World Health
Organization

Advocacy: Winning political commitments to meet WHO air quality

50 countries representing over 1 billion people committed at the UNSG Climate Action Summit;

➤ 400.000 lives/year saved by compliance

26 countries, 12 cities, 11 UN agencies, 39 NGOs and the EU committed to a range of interventions to address air pollution

Clean Air Initiative Commitments

National Clean Air Commitment

Sub-National Clean Air Commitment

Has not joined the CAI

Driving political leadership and commitment: 194 Member States agreed to WHA resolution and roadmap on air pollution.

76 member BreatheLife network – local efforts to improve air quality and monitor progress towards meeting WHO air quality guidelines.

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Global conference on air pollution and health:

**Accelerating action for
clean air, clean energy access and climate mitigation**

**28 October - 1 November 2024
Accra, Ghana**

Spotlight on solutions:

Conference aims and expected outcomes

The Global conference on air pollution and health: Accelerating action for clean air, clean energy access and climate mitigation will highlight policy actions for air pollution and lack of energy access; and catalyse evidence-based, multi-sectoral actions in cities, countries and regions.

Key objectives of the conference include:

Share the latest evidence on health risks of air pollution and energy poverty, assessment tools and resources for decision-making.

- Take stock of global progress since 2015 after the WHA resolution was passed and the start of the Sustainable Development Goals.
- Showcase health, climate, gender and equity co-benefits of air pollution and energy action.
- Mobilize, value and empower health professionals to 'prescribe' clean air for health.
- Iterate strategies to mitigate the health sector's environmental footprint.
- Harness climate and development finance to tackle air pollution and ensure a just energy transition.
- Leverage health arguments to drive country cooperation and financial commitments.
- Countries, regions and cities join BreatheLife and commit to air pollution reductions by 2030 and beyond.

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Thank you

For more information, please contact:

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