

# 2025 AIR QUALITY OBJECTIVES REVIEW

PUBLIC CONSULTATION 12.7.2019-11.10.2019

## APPROACH FOR THE REVIEW OF HONG KONG'S AIR QUALITY OBJECTIVES



To progressively improve our air quality through the implementation of various emission reduction measures and setting of interim targets, with a view to meeting the ultimate targets of the World Health Organisation (WHO) Air Quality Guidelines (AQGs) as our final goal.



At present, no country has fully adopted the ultimate targets of the WHO AQGs as its statutory air quality standards.

2020

Six of the Hong Kong's prevailing Air Quality Objectives (AQOs) are already set at the ultimate targets of the WHO AQGs. The Government's target is to broadly attain the level of the prevailing AQOs in 2020.

2025

The review of the AQOs is a statutory and an on-going process. The current review assessed air quality improvements in 2025 and the scope for tightening the AQOs.

2030

The next review will be conducted in the coming few years to assess the scope for further tightening the AQOs in 2030.

How is Hong Kong's air quality compared with other major Asian cities?

The air quality in Hong Kong is comparable with Taipei but better than Seoul.

## THE REVIEW



Explore possible new air quality improvement measures targeting major air pollution sources in Hong Kong.



Assess air quality improvements in 2025 and the scope for tightening the AQOs.



Assess the associated health and economic benefits brought by air quality improvements in 2025.

An AQOs Review Working Group comprising some 60 experts and stakeholders was formed to identify new measures to improve air quality, assess air quality improvements in 2025 as well as the associated health and economic benefits in 2025 arising from implementing the new measures.



## POSSIBLE NEW AIR QUALITY IMPROVEMENT MEASURES

Examples are:

### Energy and Power Generation

- To encourage the development of more waste-to-energy facilities for waste reduction and increase renewable energy.
- To progressively tighten the statutory emission caps of three key air pollutants (namely sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and respirable suspended particulates (PM<sub>10</sub>) from power plants.
- To increase local gas generation to around 50% of the total fuel mix for electricity generation by 2020.

### Marine Transportation

- Ocean-going vessels (OGVs) at berth to use marine diesel with sulphur content not exceeding 0.1%.
- Hong Kong is the first port in Asia to mandate OGVs to switch fuel at berth. Since 2015, OGVs have been required to switch to low sulphur fuel (with sulphur content not exceeding 0.5%) while at berth.
- Since 2019, vessels have been required to use low sulphur fuel within Hong Kong waters to further reduce their emissions.

### Road Transportation

- To foster pedestrian-friendly environment (e.g. widening of footpaths, construction of covered walkways and enhancing pedestrian connections) to encourage the public to walk.
- To phase out some 82,000 pre-Euro IV diesel commercial vehicles (DCVs) by end of 2019.
- To limit the service life of newly registered DCVs to 15 years since 2014.

### Other Emission Sources

- To review the feasibility to impose volatile organic compounds (VOC) limits on non-regulated consumer products (e.g. general purpose cleaner, deodorant, disinfectant).
- To control the VOC contents of architectural paints/coatings, printing inks and six selected categories of consumer products in phases since 2007.

Note: ★ Recommended short-term new measures  
▶ Other on-going measures

## REVIEW FINDINGS

Based on the air quality assessment results for 2025, it is recommended to tighten the AQOs for SO<sub>2</sub> and PM<sub>2.5</sub>:

Pollutants	Averaging Time	World Health Organisation Air Quality Guidelines (µg/m <sup>3</sup> )			No. of Exceedances Allowed
		IT-1	IT-2	IT-3	
Sulphur Dioxide (SO <sub>2</sub> )	10-min	—	—	—	3
	24-hr	125	50	—	3
Respirable Suspended Particulates (RSP/PM <sub>10</sub> )	Annual	70	50	30	Not applicable
	24-hr	150	100	75	9
Fine Suspended Particulates (FSP/PM <sub>2.5</sub> )	Annual	35	25	15	Not applicable
	24-hr	75	50	37.5	9 ▶ 35
Nitrogen Dioxide (NO <sub>2</sub> )	Annual	—	—	—	Not applicable
	1-hr	—	—	—	18
Ozone (O <sub>3</sub> )	8-hr	—	160	—	9
Carbon Monoxide (CO)	1-hr	—	—	—	30,000
	8-hr	—	—	—	10,000
Lead (Pb)	Annual	—	—	—	0.5

■ Prevailing Hong Kong AQOs are indicated in green cells  
■ Proposed new AQOs and allowable number of exceedances are indicated in orange cells

IT: WHO's Interim Target

### 24-hr AQO

IT-1(125µg/m<sup>3</sup>) ▶ IT-2(50µg/m<sup>3</sup>)

SO<sub>2</sub> is mainly emitted from local emission sources. The review recommended tightening the 24-hr AQO for SO<sub>2</sub> to IT-2 level (50 µg/m<sup>3</sup>) which is more stringent than the standards of many advanced countries.

### Annual AQO

IT-1(35µg/m<sup>3</sup>) ▶ IT-2(25µg/m<sup>3</sup>)

According to local studies, the health risks associated with long-term exposure to PM<sub>2.5</sub> (as represented by annual mean concentration) is about ten times higher than that of the short-term exposure to PM<sub>2.5</sub> (as represented by 24-hr concentration). According to the WHO AQGs, lowering the annual mean of PM<sub>2.5</sub> from IT-1 to IT-2 could reduce the risk of premature death by about 6%.

### 24-hr AQO

IT-1(75µg/m<sup>3</sup>) ▶ IT-2(50µg/m<sup>3</sup>)

The review proposes tightening of the 24-hr AQO for PM<sub>2.5</sub> to the IT-2 level (50µg/m<sup>3</sup>) while increasing the number of allowable exceedances to 35 times. Is this more lenient than the prevailing AQO set at the IT-1 level (75 µg/m<sup>3</sup>) with 9 allowable exceedances?

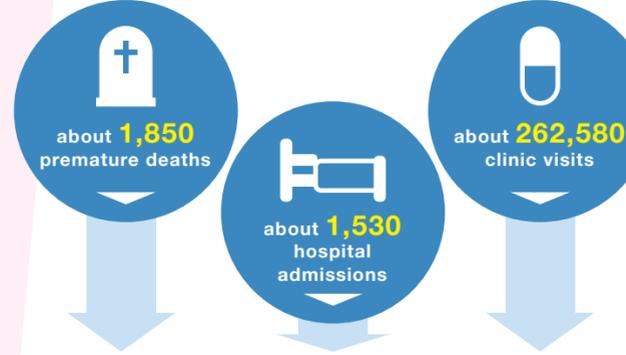
Historical data of our air quality monitoring network verify that the proposed 24-hr AQO for PM<sub>2.5</sub> (50µg/m<sup>3</sup> and 35 exceedances allowed in a year) recommended by the review is more stringent than the prevailing 24-hr AQO (75µg/m<sup>3</sup> and 9 exceedances allowed in a year). Between 2011 and 2017, our ambient air quality monitoring network recorded 17 exceedances against the prevailing 24-hr AQO for PM<sub>2.5</sub>, but 30 exceedances against the proposed new AQO. This suggests that our air quality, after attaining the prevailing AQO, has to continuously improve in order to meet the proposed new AQO.

Are there any international precedents for allowing 35 exceedances?

The European Union and the United Kingdom allow 35 exceedances for the 24-hr PM<sub>10</sub> standard.

## HEALTH AND ECONOMIC BENEFITS

Compared with 2015, the projected health and economic benefits brought by the air quality improvement in 2025 are:



About HK\$33 billion could be saved\*

\* All costs are adjusted to the price level of 2017

## SHARE YOUR VIEWS

You are welcome to submit your views online ([www.aqoreview.hk](http://www.aqoreview.hk)) or download the views collection form and send your views to the Environmental Protection Department on or before 11 October 2019 by email, fax or post:

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Online Views Collection Form



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