

# Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network results for 2022 released

Guangdong, Hong Kong and Macao jointly released today (August 7) a report on air quality in 2022 under the Guangdong-Hong Kong-Macao Pearl River Delta Regional Air Quality Monitoring Network, which indicated continuous improvement in the air quality of the Pearl River Delta region.

The regional air quality monitoring network commenced operation in November 2005 and the monitoring parameters include three air pollutants (sulphur dioxide, respirable suspended particulates and nitrogen dioxide) and one photochemical secondary air pollutant (ozone). In September 2014, two more air pollutants (carbon monoxide and fine suspended particulates) were introduced into the network. All the five air pollutants display a long-term downward trend (shown in Annex 1). Compared with 2006, the average annual concentration levels of sulphur dioxide (SO<sub>2</sub>), respirable suspended particulates (RSPs, PM<sub>10</sub>) and nitrogen dioxide (NO<sub>2</sub>) in 2022 decreased by 86 per cent, 52 per cent and 45 per cent respectively. Compared with 2015, the average annual concentration levels of carbon monoxide (CO) and fine suspended particulates (FSPs, PM<sub>2.5</sub>) in 2022 decreased by 16 per cent and 38 per cent respectively. On the other hand, the 2022 average annual concentration level of ozone (O<sub>3</sub>) increased by 39 per cent when compared with that in 2006, indicating that further alleviation of the regional photochemical pollution is required. The average annual concentration levels of the above six air pollutants since 2006 are shown in Annex 2.

To continually improve regional air quality, the Hong Kong Special Administrative Region (HKSAR) Government and the Guangdong Provincial Government have long been committed to reducing emissions of air pollutants from major emission sources. The two Governments have completed a study on post-2020 regional air pollutant emission reduction targets and concentration levels, setting the direction for collaboration in addressing ozone issues. In addition, the study on "Characterisation of Photochemical Ozone Formation, Regional and Super-Regional Transportation in the Greater Bay Area" is also in progress, aiming to understand the origins of ozone precursors, ozone formation mechanisms and regional and super-regional transportation characteristics in the Greater Bay Area (GBA) to provide a scientific basis for formulating ozone control strategies. On monitoring, the Governments of Guangdong, Hong Kong and Macao are exploring the incorporation of routine volatile organic compounds (VOCs) monitoring into the regional air quality monitoring network. Moreover, the HKSAR Government is also actively preparing to set up a supersite for GBA air quality laboratory and meteorology monitoring in Hong Kong to provide regional air pollution and meteorological monitoring and forecasting services.

The HKSAR Government has implemented various air pollutant emission

control measures on marine and land transport, power plants and non-road mobile machinery to enhance air quality, and announced in 2021 the Hong Kong Roadmap on Popularisation of Electric Vehicles, the Clean Air Plan for Hong Kong 2035 and Hong Kong's Climate Action Plan 2050, setting out a variety of measures and striving to achieve zero vehicular emissions and carbon neutrality in Hong Kong before 2050. The HKSAR Government is progressively implementing measures of the roadmap and blueprints, which include promoting the use of electric vehicles and other new-energy vehicles, green transport, zero-carbon energy and other environmental protection measures conducive to continuously improving the air quality of Hong Kong.

The HKSAR Government has also been adopting a multipronged strategy to reduce VOC emissions. The VOC emissions in Hong Kong have been steadily reducing due to the continuous implementation of various air pollutant emission reduction measures. To further work on this, the HKSAR Government is preparing amendment of the relevant legislation to tighten the VOC content limits of 22 types of regulated architectural paints and to extend the VOC control to cleaning products.

Guangdong Province published and implemented the "Notice on Implementation of Monitoring Requirements on Fugitive Emission of VOCs from Factories Issued by Department of Ecology and Environment of Guangdong Province", "Notice on Strengthening Control of VOCs Emissions in Storage and Transportation of Oil Depots and Petrochemical and Chemical Enterprises", "Notice on Further Reduction of Nitrogen Oxides from Stationary and Mobile Sources issued by Department of Ecology and Environment of Guangdong Province", and "Notice on Strengthening Environmental Control on Diesel Trucks of Key Vehicle-using Enterprises", as well as promulgating the local standard "Integrated Emission Standard of VOCs for Stationary Pollution Source" (DB44/2367-2022). Guangdong Province launched the hierarchical management of VOCs-related enterprises, enhanced total VOCs management, advanced the control of industrial boilers and furnaces, upheld the co-ordination of "Vehicle, Oil, Road, Enterprise", strengthened the environmental control on diesel trucks of key vehicle-using enterprises and compliance checks of new vehicles, improved the management of non-road mobile machinery emission, and organised regular sampling and inspection on oil quality and emissions of engineering machinery.

The Government of the Macao Special Administrative Region (SAR) rolled out a series of air quality improvement measures in accordance with relevant initiatives laid down in the Second Five-Year Plan for Economic and Social Development of the Macao SAR (2021-2025) and its policy objectives. Such measures include continuously reviewing and optimising tailpipe emission standards of both newly imported and in-use vehicles, encouraging vehicle owners to phase out relatively high-polluting old vehicles by subsidy scheme, promoting the use of electric vehicles and enhancing related ancillary facilities, progressively introducing air pollutant emission standards and regulations for various key industrial and commercial premises, implementing import control on architectural paints with high VOCs content, and continuously advancing the study on regulation of other products containing VOCs at a high level.

The regional air quality monitoring network, comprising a total of 23 air monitoring stations in Guangdong Province, Hong Kong and Macao, monitors six major air pollutants (i.e. SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and CO). The Ecological and Environmental Monitoring Centre of Guangdong, the Environmental Protection Department (EPD) of Hong Kong, the Macao Environmental Protection Bureau and the Macao Meteorological and Geophysical Bureau are responsible for the co-ordination, management and operation of the monitoring stations of the three sides, the release of quarterly statistical summaries and annual monitoring reports, and the analysis of long-term pollution trends. Members of the public can visit the website of the Guangdong-Hong Kong-Macao Regional Air Quality Monitoring Information System, or the websites of the Department of Ecology and Environment of Guangdong Province ([gdee.gd.gov.cn](http://gdee.gd.gov.cn)), the EPD of Hong Kong ([www.epd.gov.hk](http://www.epd.gov.hk)), the Macao Environmental Protection Bureau ([www.dspa.gov.mo](http://www.dspa.gov.mo)) or the Macao Meteorological and Geophysical Bureau ([www.smg.gov.mo](http://www.smg.gov.mo)) for the relevant annual reports and quarterly monitoring statistics.