

For discussion on
13 January 2009

**LEGISLATIVE COUNCIL
PANEL ON ENVIRONMENTAL AFFAIRS
SUBCOMMITTEE ON IMPROVING AIR QUALITY**

Progress of the Review of Hong Kong's Air Quality Objectives

PURPOSE

This paper briefs Members on the progress of the review of Hong Kong's Air Quality Objectives (AQOs) and the development of a long-term air quality management strategy.

BACKGROUND

2. The Air Pollution Control Ordinance (APCO) (Cap. 311) empowers the Government to establish AQOs. In 1987, a set of AQOs comprising seven major air pollutants was established after making reference to researches done mainly in the United States.

3. In response to the publication of the World Health Organization (WHO)'s Air Quality Guidelines (AQGs) in 2006, we commissioned a consultancy study in June 2007 to review the current AQOs taking account of the WHO AQGs and the practice of other advanced countries. An Advisory Panel comprising members from various sectors with different background and interests, such as transport, energy and power, as well as from districts, medical, air science, planning, community health, etc., has been formed to steer the review.

4. To affirm the Administration's commitment to improving air quality, the Chief Executive announced in the 2008/09 Policy Address that we will adopt targets in stages giving due regard to WHO's guidelines in reviewing the AQOs.

PROGRESS OF THE REVIEW

5. The Advisory Panel has held five meetings to consider the initial findings and provide steer to the review. As part of the review process, the consultants of the review organised two public forums in December 2007 and January 2008 to solicit views from stakeholders. The consultants are still working on the recommendations on the new AQOs and the air quality management strategy for their attainment. Some of the preliminary findings of the review are set out below.

Reference to WHO AQGs

6. In the light of the latest scientific evidence, the initial findings of the review suggest that there is scope to tighten the current AQOs for the better protection of public health.

7. The AQGs of the WHO have been drawn up based on a wealth of new studies on the health effects of air pollution and following extensive consultation with leading air scientists and health experts worldwide. They are an authoritative set of air quality guidelines that provides a good basis for all countries to build their air quality standards to minimize the risk of air pollution to public health.

8. In promulgation of the AQGs, WHO accepts the need for governments to set national standards according to their own particular circumstances. It recommends interim targets (ITs) on sulphur dioxide (SO₂), respirable particulate matters (PM₁₀), fine particulates (PM_{2.5}) and ozone (O₃) to facilitate a progressive approach for achieving the ultimate AQGs and provide milestones in delivering better air quality. Progressive compliance with these interim targets could bring significant reduction in risks for acute and chronic health effects associated with air pollution.

International Approach in Reviewing Legal Air Quality Standards

9. In overseas jurisdictions, it is a common practice to set progressive targets in their legal air quality standards. **Annex A** shows the prevailing legal air quality standards of US, EU and Australia. It also sets out Hong Kong's existing AQOs, the WHO AQGs and their interim targets.

10. Among developed countries, the European Union (EU) has the most stringent air quality standards; which were updated on 21 May 2008. EU's current air quality standards for SO₂, PM₁₀, PM_{2.5} and O₃ are however less

stringent than those prescribed under the WHO AQGs. So far, we are not aware of any jurisdictions adopting WHO AQGs as legal standards.

11. Having regard to the principles recommended by the WHO, the international practices and local circumstances, the review is inclined to recommend a progressive and forward-looking approach in mapping out a new set of tightened AQOs for continual improvement of air quality. The WHO AQGs should be pursued as a long-term aspirational goal.

Air Quality Management Strategy

12. As part of the review, the consultants are required to recommend an air quality management strategy for achieving the new AQOs. Broadly speaking, stringent emission control measures would have to be undertaken in the following areas –

- (a) cutting the emissions from power plants by increasing the proportion of natural gas from the current 28% to, say, 50% or even more of the fuel mix for local electricity generation;
- (b) further tightening the control of emissions from vehicles, vessels and other sources;
- (c) introducing suitable traffic management measures to reduce roadside emissions (such as low emission zones, etc);
- (d) expanding rail/tram network; and
- (e) promoting energy efficiency.

13. On the other hand, implementation of these proposed strategies require careful analysis of tariff implications, operational costs and consequential fare impacts for transport trades, in addition to logistical and technical planning. While the consultants are conducting cost-benefit analysis of various strategies on the basis of technological and health studies, and available planning data, full public consultation would need to be undertaken on specific proposals in due course before they can be rolled out.

Regular Review Mechanism

14. In line with the international practice, the consultants have initially recommended to introduce a regular review mechanism on the prevailing AQOs

to take stock of the implementation of the air quality management strategy, to ascertain the air quality of Hong Kong and to assess the need and practicality of further tightening the AQOs.

WAY FORWARD

15. The review is expected to complete in the first half of 2009. Another public engagement forum will be held in early 2009 to canvass the views from the stakeholders on the initial recommendations. A full scale public consultation will be organized on the final recommendations of the review towards mid 2009 before Government takes a view on the new AQOs and the air quality management strategy for their attainment.

Environmental Protection Department
January 2009

Annex A

Existing HKAQOs, WHO and Overseas Standards/Guidelines

Pollutant	Avg Time	HK AQOs	WHO AQGs⁽¹⁾	USA	EU	UK	Australia
Sulphur Dioxide	10-min	-	500 ^[1]	-	-	266 (15-min average)	-
	1-hour	800	-	-	350	350	524
	24-hour	350	20 (IT-1: 125, IT-2: 50) ^[2]	365	125	125	210
	Annual	80	-	80	-	-	52
Total Suspended Particulate	24-hour	260	-	-	-	-	-
	Annual	80	-	-	-	-	-
Respirable Suspended Particulate (PM10)	24-hour	180	50 (IT-1: 150, IT-2: 100, IT-3: 75)	150	50	50	50
	Annual	55	20 (IT-1: 70, IT-2: 50, IT-3: 30)	-	40	40	
Fine Suspended Particulate (PM2.5)	24-hour	-	25 (IT-1: 75, IT-2: 50, IT-3: 37.5)	35	-	-	25 ^[3]
	Annual	-	10 (IT-1: 35, IT-2: 25, IT-3: 15)	15	25	25	8 ^[3]
Nitrogen Dioxide	1-hour	300	200	-	200	200	226
	24-hour	150	-	-	-	-	-
	Annual	80	40	100	40	40	57
Ozone	1-hour	240	-	-	-	-	200
	4-hour	-	-	-	-	-	160

Pollutant	Avg Time	HK AQOs	WHO AQGs⁽¹⁾	USA	EU	UK	Australia
	8-hour	-	100 (High levels: 240, IT-1: 160)	147	120	100	-
Carbon Monoxide	15-min	-	100,000	-	-	-	
	30-min	-	60,000	-	-	-	
	1-hour	30,000	30,000	40,000	-	-	-
	8-hour	10,000	10,000	10,000	10,000	10,000	10,000
Lead	3-month	1.5	-	1.5	-	-	-
	Annual	-	0.5	-	0.5	0.25	0.5

Note: [1] concentration unit is ug/m3.
[2] IT stands for interim target.
[3] reporting standard.