

# **立法會**

## ***Legislative Council***

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### **Panel on Environmental Affairs**

**Meeting on 26 June 2017**

#### **Background brief on review of Air Quality Objectives prepared by the Legislative Council Secretariat**

### **Purpose**

This paper provides background information on the review of the Air Quality Objectives ("AQOs") of Hong Kong, and gives a brief account of the major views and concerns expressed by Members when related issues were discussed by relevant committees of the Legislative Council ("LegCo") in the 2011-2012 to 2016-2017 legislative sessions.

### **Background**

#### Air Quality Objectives

2. AQOs of Hong Kong are stipulated in the Air Pollution Control Ordinance (Cap. 311) ("APCO") as the objectives that should be achieved and maintained in order to promote the conservation and best use of air in the public interest. AQOs are also benchmarks for assessing the air quality impact of specified processes under APCO and of designated projects under the Environmental Impact Assessment Ordinance (Cap. 499) ("EIAO").<sup>1</sup>

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<sup>1</sup> The Technical Memorandum on Environmental Impact Assessment Process issued under EIAO sets out unified technical guidelines and criteria for the Environmental Impact Assessment ("EIA") procedures. The Technical Memorandum requires EIA studies to adopt the environmental objectives or requirements stipulated under various pollution control ordinances and other relevant ordinances as the criteria for assessment. Any update to these statutory objectives or requirements will automatically be applicable to EIAO at the same time.

3. In response to the release of the new Air Quality Guidelines by the World Health Organization ("WHO") in 2006 for global application for protection of public health ("the WHO Guidelines"),<sup>2</sup> the Environmental Protection Department ("EPD") commissioned a consultancy study in 2007 on updating the former set of AQOs of Hong Kong which had been in place since 1987. Findings of a public consultation conducted in 2009 indicated general public support for the proposal to update the AQOs. With the passage of the Air Pollution Control (Amendment) Bill 2013 on 10 July 2013, the updated set of AQOs took effect from 1 January 2014.

4. The prevailing AQOs are benchmarked against a combination of interim and ultimate air quality targets in the WHO Guidelines, and set out the standards for seven types of air pollutants, namely sulphur dioxide, respirable suspended particulates, fine suspended particulates ("PM2.5"), nitrogen dioxide, ozone, carbon monoxide and lead (**Appendix I**).

#### Review of the Air Quality Objectives

5. APCO requires that AQOs should be reviewed at least once every five years. In this connection, an AQR Working Group ("Working Group") chaired by the Under Secretary for the Environment has been formed to undertake the following tasks:

- (a) engage relevant stakeholders (including air scientists, health experts, academics, professionals, green groups, community leaders and the business sector) in the deliberations on key aspects of the review of AQOs;<sup>3</sup> and
- (b) report its findings to the Secretary for the Environment for his consideration in the AQOs review.

6. In line with the practices of the European Union ("EU") and the United States ("US"), the AQOs review encompasses the following key tasks:

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<sup>2</sup> The WHO Guidelines provide that "when the standards are set to be legally binding, criteria must be identified to determine compliance. This is quantified through the number of acceptable exceedances over a certain period of time. Compliance criteria are defined in each country in order to compare the most representative data with the standards, and to minimize the designation of non-compliance owing to uncontrollable circumstances such as extreme weather. Such compliance criteria can be determined by evaluating historical data in the region as well as variability in weather and pollution patterns."

<sup>3</sup> Four dedicated subgroups on Air Science and Health, Energy and Power Generation, Road Transportation, and Marine Transportation have been formed under the Working Group to gather views on the key aspects of AQOs review.

- (a) appraising the latest development in respect of air science and the health effects of air pollution;
- (b) examining the current air pollution levels and trends, and progress and effectiveness of committed air quality improvement measures;
- (c) identifying new practicable air quality improvement measures and conducting cost-benefit analysis of the measures;
- (d) developing an air quality management plan for further improving air quality; and
- (e) assessing air quality in future under different control scenarios and the scope for further tightening AQOs for recommending a way forward.

7. The Administration aims at completing the review and reporting the review findings to the Panel on Environmental Affairs ("EA Panel") and the Advisory Council on the Environment in mid-2018. Thereafter, it will launch a three-month public consultation on the recommendations. If any of the AQOs is to be tightened arising from the review, the Administration will commence the legislative amendment process accordingly.

### **Major views and concerns expressed by Members**

8. On 16 April 2012 and 25 February 2013, the Subcommittee on Improving Air Quality and the Subcommittee on Issues Relating to Air, Noise and Light Pollution (which were both formed under EA Panel) were consulted on the legislative proposal to update AQOs. A bills committee was set up in March 2013 to scrutinize the Air Pollution Control (Amendment) Bill 2013. On 30 March 2016, the Administration briefed EA Panel on the work plan of the AQOs review. Relevant issues were also brought up at the Panel meeting on 27 April 2015 when the Panel discussed the progress of air quality improvement measures, and during examination of the Estimates of Expenditures 2014-2015, 2015-2016 and 2017-2018. The major views and concerns expressed by Members are summarized in the ensuing paragraphs.

### Timetable for the review of Air Quality Objectives

9. Some Members queried why the Administration had not commenced the AQOs review before mid-2016. Some other Members suggested that the reviews should be conducted more frequently (say once every two years instead of five years).

10. The Administration explained that as the prevailing set of AQOs took effect from 1 January 2014, it was more pragmatic to commence the review of AQOs in mid-2016 so as to allow reasonable time for the relevant air quality improvement measures to take effect and for the Administration to assess their impacts before conducting the review. It was expected that legislative amendments to APCO for updating AQOs, if any, could be introduced in mid-2019 at the earliest. Given the complexity and wide range of issues involved in an AQOs review, the review frequency of once every five years was considered appropriate. A similar review frequency was also adopted in US.

### Standards adopted in the prevailing Air Quality Objectives

11. During deliberation of the 2013 legislative proposal to update AQOs, some Members queried the justifications for adopting the interim air quality targets (instead of the ultimate targets) in the WHO Guidelines for certain pollutants (such as PM<sub>2.5</sub>) and for setting the number of exceedances allowed in AQOs.

12. The Administration explained that WHO recognized the need for governments to set national standards according to their own circumstances, taking into account the local air quality situation, practicable technologies, as well as economic, political and social factors. The WHO Guidelines therefore set interim targets as incremental steps for governments to reduce air pollution in a progressive manner. As the PM<sub>2.5</sub> level in Hong Kong was under strong regional influence and the ultimate target of PM<sub>2.5</sub> level in the WHO Guidelines could unlikely be attained in the near future, the Administration considered it more pragmatic to set AQO of PM<sub>2.5</sub> at the interim target level of the WHO Guidelines. The Administration also advised that the number of exceedances established for AQO of each pollutant was concordant with the WHO Guidelines and in line with the practices of advanced countries such as US and the EU countries. The Administration would consider whether the number of exceedances could be tightened in the future review of AQOs.

13. Some Members suggested that the Administration should include coarse suspended particulates (i.e. suspended particulates with a nominal aerodynamic diameter between 2.5 and 10 micrometres) in AQOs. The Administration responded that there was no international benchmark on this pollutant and hence it had no plan to include this pollutant in AQOs. The Administration would

review the scope of pollutants in AQOs in the light of the latest international development on air quality standards.

#### Air quality monitoring network

14. Members enquired whether the Administration would expand the air quality monitoring network to cover all 18 districts in Hong Kong. The Administration explained that EPD operated a comprehensive air quality monitoring network comprising general air quality monitoring stations ("AQMSs") and roadside AQMSs. In determining the sites of AQMSs in the network, EPD had taken into account a number of factors, including the spatial distribution of the air quality monitoring network, the coverage in different types of development areas, local population, the distribution of traffic flow and pollution sources, the capability in monitoring regional air pollution, topography and meteorology. The Administration considered that the current network had an adequate spatial distribution of general AQMSs covering different land uses of the urban, new town and rural areas. It was thus unnecessary to set up a general AQMS in each of the 18 districts.

15. For roadside AQMSs, the Administration advised that the existing ones in Central, Causeway Bay and Mongkok were built in the busy corridors of urban areas with high traffic and pedestrian flow and surrounded by high-density built environment. The data from these roadside AQMSs were representative of the roadside air quality of typical places with heavy vehicular and pedestrian traffic in the urban areas. As such, it would not be necessary to increase the number of roadside AQMSs.

#### **Council questions**

16. At the Council meetings of 26 November 2014, 18 November 2015 and 15 February 2017, Hon Dennis KWOK, Hon CHAN Hak-kan and Hon Kenneth LEUNG raised questions relating to AQOs. Issues covered in the questions include whether and when the Administration would adopt the ultimate air quality targets in the WHO Guidelines, and the criteria for assessing the health hazards caused by air pollution. The questions and the Administration's replies are hyperlinked in **Appendix II**.

#### **Latest development**

17. At the meeting on 26 June 2017, the Administration will brief EA Panel on the progress of the AQOs review.

**Relevant papers**

18. A list of relevant papers is set out in **Appendix II**.

Council Business Division 1  
Legislative Council Secretariat  
20 June 2017

## Appendix I

### Prevailing Air Quality Objectives of Hong Kong

Pollutant	Averaging time	Concentration limit ( $\mu\text{g}/\text{m}^3$ )	Number of exceedances allowed
Sulphur dioxide	10-minute	500	3
	24-hour	125	3
Respirable suspended particulates (PM10)	24-hour	100	9
	Annual	50	Not applicable
Fine suspended particulates (PM2.5)	24-hour	75	9
	Annual	35	Not applicable
Nitrogen dioxide	1-hour	200	18
	Annual	40	Not applicable
Ozone	8-hour	160	9
Carbon monoxide	1-hour	30 000	0
	8-hour	10 000	0
Lead	Annual	0.5	Not applicable

*Note: All measurements of the concentration of gaseous air pollutants, i.e. sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide, are to be adjusted to a reference temperature of 293 Kelvin and a reference pressure of 101.325 kilopascal.*

[Source: [Website of the Environmental Protection Department](#)]

## Review of Air Quality Objectives

### List of relevant papers

Date	Event	Paper
16 April 2012	Meeting of the Subcommittee on Improving Air Quality under the Panel on Environmental Affairs	Administration's paper on "Update of Air Quality Objectives" (LC Paper No. <a href="#">CB(1)1532/11-12(01)</a> )  Minutes of meeting (LC Paper No. <a href="#">CB(1)2074/11-12</a> )
25 February 2013	Meeting of the Subcommittee on Issues Relating to Air, Noise and Light Pollution under the Panel on Environmental Affairs	Administration's paper on "Interface between the Environmental Impact Assessment Ordinance (Cap. 499) and the Air Pollution Control Ordinance (Cap. 311)" (LC Paper No. <a href="#">CB(1)567/12-13(01)</a> )  Minutes of meeting (LC Paper No. <a href="#">CB(1)1365/12-13</a> )
20 March 2013	Air Pollution Control (Amendment) Bill 2013 tabled before the Legislative Council	<a href="#">The Bill</a>  Legislative Council Brief on Air Pollution Control (Amendment) Bill 2013 (File Ref.: <a href="#">EP CR 9/150/34</a> )  Legal Service Division report (LC Paper No. <a href="#">LS31/12-13</a> )
April to June 2013	Bills Committee on Air Pollution Control (Amendment) Bill 2013 scrutinized the Bill	Report of the Bills Committee (LC Paper No. <a href="#">CB(1)1464/12-13</a> )
1 April 2014	Special meeting of Finance Committee for examination of Estimates of Expenditure 2014-2015	Written question raised by a Member and Administration's reply (Reply serial number: <a href="#">ENB292</a> )



<b>Date</b>	<b>Event</b>	<b>Paper</b>
30 March 2015	Special meeting of Finance Committee for examination of Estimates of Expenditure 2015-2016	Written questions raised by Members and Administration's replies (Reply serial numbers: <a href="#">ENB071, 091, 130, 164, 276, 280 and 307</a> )
27 April 2015	Meeting of the Panel on Environmental Affairs	Administration's paper on "Progress of air quality improvement measures" (LC Paper No. <a href="#">CB(1)763/14-15(03)</a> )  Minutes of meeting (LC Paper No. <a href="#">CB(1)979/14-15</a> )
30 March 2016	Meeting of the Panel on Environmental Affairs	Administration's paper on "Work Plan of the Review of Air Quality Objectives" (LC Paper No. <a href="#">CB(1)705/15-16(03)</a> )  Administration's follow-up paper (LC Paper No. <a href="#">CB(1)1010/15-16(02)</a> )  Minutes of meeting (LC Paper No. <a href="#">CB(1)969/15-16</a> )
5 April 2017	Special meeting of Finance Committee for examination of Estimates of Expenditure 2017-2018	Written question raised by a Member and Administration's reply (Reply serial number: <a href="#">ENB110</a> )

### Hyperlinks to relevant Council Questions:

<b>Date</b>	<b>Council Question</b>
26 November 2014	<a href="#">Press release</a> on Council question (oral) raised by Hon Dennis KWOK
18 November 2015	<a href="#">Press release</a> on Council question (oral) raised by Hon CHAN Hak-kan
15 February 2017	<a href="#">Press release</a> on Council question (written) raised by Hon Kenneth LEUNG