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Bills Committee on Air Pollution Control (Amendment) Bill 2013

Background brief
prepared by the Legislative Council Secretariat

Purpose

This paper provides background information on the Air Pollution Control (Amendment) Bill 2013 ("the Bill"), and gives a brief account of the views and concerns on the review of the Air Quality Objectives ("AQOs") and the legislative proposal expressed by Members.

Background

The AQOs Review

2. The current AQOs in Hong Kong, which were promulgated in 1987 under the Air Pollution Control Ordinance (Cap. 311) ("APCO"), set out the concentration limits of seven key air pollutants¹ in the ambient air. In response to the release of the new Air Quality Guidelines ("AQGs") by the World Health Organization ("WHO") for global application for protection of public health, the Environmental Protection Department commissioned a consultancy study in 2007 to review Hong Kong's existing AQOs and develop a long-term air quality management strategy. Taking into account WHO's new guidelines and practices in other advanced countries, the review proposed a set of new AQOs which benchmarks against WHO's Interim Targets ("ITs") and AQGs, accompanied by a host of proposed air quality improvement measures that are required to help Hong Kong achieve the new objectives.

3. The Administration launched a four-month public consultation from July to November 2009 to gauge the public's response to the recommendations. The consultation findings show a general support for the proposed new AQOs,

¹ The seven key air pollutants include sulphur dioxide ("SO₂"), nitrogen dioxide ("NO₂"), total suspended particulates ("TSP"), respirable suspended particulates ("RSP" or "PM₁₀"), carbon monoxide ("CO"), ozone ("O₃") and lead ("Pb").

adoption of a staged approach in achieving the WHO's AQGs and implementation of the proposed package of air quality improvement measures.

4. Taking account of the views of the community, the Administration considers it appropriate to adopt the proposed AQOs put forth in the public consultation as the new AQOs for Hong Kong, which are broadly comparable to those being adopted in the European Union and the United States.

Measures to achieve the proposed new AQOs

5. To attain the proposed new AQOs, the AQOs Review has recommended 19 Phase I air quality improvement measures. These include, inter alia, changing the fuel mix of the power sector in favour of cleaner fuel, early replacement of aged vehicles, wider adoption of hybrid and electric vehicles, transport management measures such as bus route rationalization, setting up low emission zones, expanding the rail network and promotion of energy efficiency, etc. According to the Administration, with these measures and further emission reduction on the Mainland side of the Pearl River Delta ("PRD") region, Hong Kong's ambient air quality should be able to broadly comply with the proposed new AQOs.

Transitional arrangement

6. Under the Environmental Impact Assessment Ordinance (Cap. 499) ("EIAO"), approval of environmental impact assessment ("EIA") reports and issue of environmental permits ("EPs") have to make reference to the prevailing AQOs at the time the decision is made. Introduction of the new AQOs might have impact on projects already granted with an EP before the new AQOs come into operation. In the event that the amendments to the scope of such projects should warrant an application for a variation to the EP to be supported by a new EIA, the application of the new AQOs may cause substantial changes to the original design of the project and have major cost and programming implications. In order to preserve the integrity of the EIA system as an ongoing mechanism, as well as the regulatory certainty for proponents of projects that have already completed the EIA process, the Bill provides for a time-limited transitional period of 36 months from the commencement date of the new AQOs, within which the new AQOs will not apply to an application for variation of an EP.

7. To underscore the Administration's commitment to adopting the best practices and to provide greater certainty to works departments in planning new development projects, all government projects for which EIA studies have not yet commenced would endeavour to adopt the proposed new AQOs for conducting the air quality impact assessment under the EIA studies.

Review mechanism

8. The Administration's long-term goal is to achieve the WHO AQGs. To deliver this target progressively, the Administration has undertaken to put in place a review mechanism to regularly ascertain the extent to which the new AQOs have been achieved, the progress of the air management strategy, as well as the need and practicality of further tightening the AQOs. The Administration proposes that the frequency of the review should be no less than once every five years to allow reasonable time to assess the impacts of the earlier emission control measures on air quality.

Deliberations by Members

Subcommittee on Improving Air Quality

9. The Administration briefed the Subcommittee on Improving Air Quality, which was formed under the Panel on Environmental Affairs in the last term, the proposed new AQOs and the air quality improvement measures for achieving these new objectives at the meeting on 16 April 2012.

The new AQOs

10. Some members have expressed concern about the adoption of different ITs of WHO AGQs as the proposed new AQOs. The Administration has advised that while WHO AQOs are released for global application for the protection of public health, WHO accepts the need for governments to set national standards according to their own particular circumstances. To facilitate a progressive approach for achieving the ultimate AQGs, the WHO guidelines have suggested ITs for certain pollutants. So far, no countries are able to adopt the ultimate AQGs in entirety as their legal standards. The proposed new AQOs for Hong Kong are derived taking into account WHO's guidelines and practices in other advanced countries. WHO IT-1 is adopted for fine suspended particulates ("PM2.5") and ozone because their levels in Hong Kong are subject to strong regional influence.

11. Some other members have expressed concern about the long lead time for the proposed new AQOs to take effect. To facilitate better public understanding of the air pollution level, these members have enquired the feasibility of benchmarking the existing Air Pollution Index ("API") against the proposed new AQOs, and expanding the air quality monitoring network to cover all 18 districts in Hong Kong.

12. According to the Administration, the current air quality monitoring network in Hong Kong comprises 14 air quality monitoring stations ("AQMSs") (including 11 general stations for monitoring ambient air quality and three

roadside stations for measuring street level air quality) covering major areas in the territory from East to West and South to North. In terms of land uses, the network covers different types and density of development (such as residential areas, mixed residential/commercial areas, mixed residential/commercial/industrial areas, rural areas, and busy urban roadside areas). In deciding the locations of AQMSs, factors (such as spatial distribution of air quality monitoring stations, coverage of different types of development areas, distribution of local population, traffic flow, and pollution sources) have been taken into account to ensure the representativeness of air quality data. The Administration has further advised that it will correspondingly review and improve the existing API system to tie in with the updating of AQOs.

Frequency of reviews

13. Noting that subsequent reviews of AQOs will take place in no less than once every five years, some members have asked if consideration could be given to conducting more frequent reviews (say in every two years) and if not, whether a mid-term review can be carried out during the interim to take account of the changes in air quality in Hong Kong and PRD region. According to the Administration, the review will serve as an opportunity to take stock of the progress of air management strategy, as well as the latest technological developments, guidelines of WHO, international experiences and the prevailing local circumstances. It is therefore necessary to allow reasonable time for the relevant air quality improvement measures to take effect before considering follow-up actions in relation to the implementation of AQOs. Given the complex and wide ranging issues involved, the review frequency of every five years is considered appropriate. Besides, a similar review frequency has also been adopted in the United States.

Proposed AQOs for PM_{2.5}

14. While welcoming the introduction of standard on PM_{2.5} under the proposed new AQOs, members have expressed concern about the impacts of implementation of the AQOs for PM_{2.5} on the transport sector which is the major source of PM_{2.5} emissions. The Administration has advised that the PM_{2.5} level in Hong Kong has been under strong regional influence. It is worth noting that emissions of particulate in Hong Kong and the PRD region are in the proportion of 1:99. The introduction of standard on PM_{2.5} under the proposed new AQOs (pitched at the WHO IT-1 level) would serve as a starting point and will be subject to review in future.

15. The Administration has further advised that since 1999, a series of measures to reduce particulate emissions from vehicles (in particular PM_{2.5}) have been implemented. These include the introduction of liquefied petroleum gas taxis and light buses, progressive upgrading of the quality of motor vehicle

diesel and emission standards of newly registered vehicles, mandatory retrofitting of particulate removal devices in pre-Euro diesel vehicles, and strengthening of the smoke emission control for diesel vehicles. As a result, the particulate concentration at roadside (which comprises both PM10 and PM2.5) has been substantially reduced. During the period from 1999 to 2011, a decline of 28% and 18% of PM2.5 and PM10 has been recorded at the Central roadside station.

Measures to achieve the proposed new AQOs

16. Members have sought elaboration on the progress of the various measures to reduce vehicular emissions, inter alia, the two incentive schemes to encourage early replacement of pre-Euro, Euro I and Euro II commercial vehicles, as well as the setting up of low emission zones ("LEZ").

17. According to the Administration, the estimated average ages of serving pre-Euro, Euro I and Euro II diesel commercial vehicles are 19.6 years, 15.6 years and 12.7 years respectively. Of the \$3.2 billion of fund approved for the incentive scheme for pre-Euro and Euro I diesel commercial vehicle, \$770 million were spent upon conclusion of the scheme in March 2010. About 11 300 and 5 800 pre-Euro and Euro I diesel vehicles respectively were replaced, representing a take-up rate of about 30%. For the on-going incentive scheme for Euro II diesel commercial vehicles, about \$264 million were spent (i.e. 49% of the allocated fund) while about \$275 million are still available for application by eligible vehicle owners. About 3 300 Euro II diesel vehicles were replaced so far, representing a take-up rate of about 12%. The Administration is discussing with relevant stakeholders and bureaux/departments in mapping out measures (including financial disincentives such as increase in vehicle licence fee) to reduce the number of pre-Euro, Euro I and Euro II diesel commercial vehicles in Hong Kong.

18. On LEZ, the Administration has advised that pilot LEZ are to be set up in busy districts (such as Causeway, Central and Mong Kok) in 2015. Starting from 2011, franchised bus companies have been requested to increase the ratio of low-emission franchised buses (i.e. those meeting the emission level of a Euro IV or above) running in these zones as far as possible, with the target of having only low-emission buses in these zones by 2015. As a result, the number of low emission buses running in these zones has increased from about 240 in January 2011 to about 440 at end March 2012, representing an increase of about 80% over the period. According to the franchised bus companies, about 2 400 low-emission buses will be required for the pilot LEZ in 2015. Apart from the regular bus replacement programme, consideration will also be given to retrofitting Euro II and III franchised buses with selective reduction devices (which will upgrade their emission performance to Euro IV standards and higher). Subject to satisfactory trial results, the retrofitted Euro II and III

buses will be deployed to meet the target of implementing the pilot LEZ in 2015.

19. While acknowledging that the deployment of low-emission buses to the pilot LEZ will help improve the roadside air quality, some members are concerned that this may be at the expense of other districts since the ratio of cleaner buses running in these districts will be reduced. According to the Administration, low-emission buses will be deployed to routes cutting across the three pilot LEZ at the busy corridors in Causeway Bay, Central and Mong Kok. Since these buses will also serve districts outside the pilot LEZ, these districts will also benefit from the cleaner buses running through them.

Transitional arrangement

20. When the Subcommittee on Issues Relating to Air, Noise and Light Pollution, which is formed under the Panel on Environmental Affairs in the current term, discussed the interface between EIAO and APCO at its meeting held on 25 February 2013, some members have expressed concerns that the provision of a 36-month transitional period in the Bill may create a loophole that allows project proponents not to comply with the more stringent requirements under the proposed new AQOs. To better understand the implications of providing a transitional period, these members have requested the Administration to provide a list of the designated projects to which the new AQOs will not apply given the transitional period.

21. On the review mechanism provided in the proposed new section 7A of APCO, a member is of the view that the mechanism should be so designed to enable and promote active public participation throughout the review process. The member also considers that the term "public interest" in the new section 7A is vague and has suggested that some clear ground rules in this respect should be provided to enhance public understanding of the operation of the review mechanism. The member has further suggested that the Administration should consider enhancing the role of the Advisory Council on the Environment in the EIA process.

Relevant papers

22. A list of the relevant papers is set out in the **Appendix**.

Appendix

List of relevant papers on the Air Pollution Control (Amendment) Bill 2013

Council/ Committee	Date of meeting	Paper
Panel on Environmental Affairs	29 July 2009	<p>Air Quality Objectives Review - Public Consultation http://www.legco.gov.hk/yr08-09/english/panels/ea/papers/ea0729-cppr090723-e.pdf</p> <p>Administration's paper on "Review of Air Quality Objectives" provided by the (LC Paper No. CB(1)2361/08-09(01)) http://www.legco.gov.hk/yr08-09/english/panels/ea/papers/ea0729cb1-2361-1-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)2712/08-09) http://www.legco.gov.hk/yr08-09/english/panels/ea/minutes/ea20090729.pdf</p>
Panel on Environmental Affairs	28 June 2010	<p>Administration's paper on "Findings of Public Consultation on Review of Air Quality Objectives" (LC Paper No. CB(1)2324/09-10(06)) http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/ea0628cb1-2324-6-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)2956/09-10) http://www.legco.gov.hk/yr09-10/english/panels/ea/minutes/ea20100628.pdf</p>
Subcommittee on Improving Air Quality	27 July 2010	<p>Administration's paper on "Review of Air Quality Objectives Proposed Air Quality Improvement Measures " (LC Paper No. CB(1) 2620/09-10(02)) http://www.legco.gov.hk/yr09-10/english/panels/ea/ea_iaq/papers/ea_iaq0727cb1-2620-2-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 3000/09-10) http://www.legco.gov.hk/yr09-10/english/panels/ea/ea_iaq/minutes/iaq20100727.pdf</p>

Council/ Committee	Date of meeting	Paper
Subcommittee on Improving Air Quality	17 January 2012	<p>Administration's paper on "A Proposal to Expand the LPG Filling Network" (LC Paper No. CB(1)394/11-12(02)) http://www.legco.gov.hk/yr11-12/english/panels/ea/ea_iaq/papers/ea_iaq1124cb1-394-2-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 1085/11-12) http://www.legco.gov.hk/yr11-12/english/panels/ea/ea_iaq/minutes/iaq20120117.pdf</p>
Subcommittee on Improving Air Quality	16 April 2012	<p>Administration's paper on "Update of Air Quality Objectives" (LC Paper No. CB(1) 1532/11-12(01)) http://www.legco.gov.hk/yr11-12/english/panels/ea/ea_iaq/papers/ea_iaq0416cb1-1532-1-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)2074/11-12) http://www.legco.gov.hk/yr11-12/english/panels/ea/ea_iaq/minutes/iaq20120416.pdf</p>
<p>Panel on Environmental Affairs</p> <p>Subcommittee on Improving Air Quality</p>	16 July 2012	<p>Report of the Subcommittee on Improving Air Quality for submission to the Panel on Environmental Affairs for the 2011-2012 legislative session (LC Paper No. CB(1) 2198/11-12) http://www.legco.gov.hk/yr11-12/english/panels/ea/ea_iaq/reports/ea_iaqcb1-2198-e.pdf</p>
Subcommittee on Issues Relating to Air, Noise and Light Pollution	25 February 2013	<p>Administration's paper on "Interface between the Environmental Impact Assessment Ordinance (Cap. 499) and the Air Pollution Control Ordinance (Cap. 311)" (LC Paper No. CB(1) 567/12-13(01)) http://www.legco.gov.hk/yr12-13/english/panels/ea/ea_anlp/papers/ea_anlp0225cb1-567-1-e.pdf</p>