

立法會
Legislative Council

LC Paper No. CB(1)569/12-13(03)

Ref. : CB1/PL/EA

Panel on Environmental Affairs

Meeting on 25 February 2013

**Background brief on "Air pollution index reporting system"
prepared by the Legislative Council Secretariat**

Purpose

This paper provides background information on the existing air pollution index ("API") reporting system and the proposal to replace the system with a new Air Quality Health Index ("AQHI"). It also gives a brief account of the views expressed by Members on the subject.

Background

Air pollution index

2. API is a simplified and generalized way for reporting air quality. In Hong Kong, API informs the public of the air pollution at ambient levels and at roadside of busy urban areas, and the potential health risk it would associate with, particularly on vulnerable groups such as children, the elderly and those with heart and respiratory diseases.

Air pollution index reporting system

3. In June 1995, the Environmental Protection Department ("EPD") introduced the API reporting system in Hong Kong. In 1999, EPD commenced compiling hourly APIs for all monitoring stations. Under the system, the hourly concentration level of each of the five air pollutants, namely sulphur dioxide, nitrogen dioxide, respirable suspended particulates, carbon monoxide and ozone, measured at each monitoring station is compared with the corresponding air quality objectives for compiling API for each pollutant, which ranges from 0 to 500. The highest API amongst the APIs of the five pollutants is taken and reported as the hourly API of that station.

4. EPD publishes the hourly APIs of the 14 stations on its website and provides such information to the public through the media. The objectives of providing API information are to: (a) provide timely air-quality information to the public in a simple manner; (b) advise the public before the onset of high air pollution levels; and (c) enhance public awareness of air pollution.

5. There are two types of API, namely general API and roadside API, which are derived from concentration levels of pollutants measured by general stations and roadside stations respectively. The general API represents the air pollution level that the general public exposes to at most of the time. The roadside API is more relevant to those who spend considerable time at roadside with heavy traffic. The range of an API (i.e. from 0 to 500) is divided into five bands of air pollution level (Low, Medium, High, Very high and Severe). An API exceeding 100 reflects high health risks. For each band of air pollution level, EPD provides precautionary advice to the general public. For the two bands of "Very high" and "Severe" levels, EPD provides additional advice to children, the elderly and outdoor workers. In recognition of the high health risks associated with very high air pollution (i.e. an API exceeding 100), EPD has set a performance target since 2006-2007 that the number of days with API not exceeding 100 in a year should be 365. In other words, API should not exceed 100 on any day in a year.

Review of the air pollution index reporting system

6. In the light of the international developments, EPD commissioned a study to review the API system. In April 2008, a study team led by the Chinese University of Hong Kong was appointed as the consultant to conduct the review. The scope of work of the study was –

- (a) to develop an API reporting system in Hong Kong for accurate and timely communication of the health risks due to ambient air pollution to the public with full justifications and after thorough trial runs using local air quality and health data; and
- (b) when the proposed new index system is found to be acceptable, to develop a turn-key system to come with detailed instruction manuals, necessary software and thorough staff training courses, and to recommend a detailed plan for smooth transition from the existing to the new reporting system.

7. The consultant submitted its study report entitled "A Study on Air Pollution Index Reporting System" to EPD in June 2012. The study report was issued to members of the Panel on Environmental Affairs ("the Panel") on 27 December 2012 via LC Paper No. CB(1)352/12-13 and is hyperlinked in **the Appendix** for members' reference.

Deliberations by Members

Subcommittee on Improving Air Quality

8. The Subcommittee on Improving Air Quality formed under the Panel was informed of the review study in the context of the discussion on dust weather incidents in the 2009-2010 session.

9. In view of the health risk associated with air pollution, members opined that legislation and guidelines should be put in place to enhance protection of employees' health and safety when working outdoors in inclement weather. Consideration should be given to introducing a warning system similar to the typhoon/rainstorm signal system to suspend outdoor work on days with extreme API.

10. According to the Administration, the Occupational Safety and Health Ordinance (Cap. 509) and the Factories and Industrial Undertakings Ordinance (Cap. 59) stipulated the general duties of employers to, so far as reasonably practicable, ensure the safety and health at work of their employees. Employers are therefore required to assess the risks of their employees performing outdoor work on days with high API, and to take appropriate preventive measures to reduce the risks. Unlike typhoons which would pose an immediate threat to public safety, high API levels would not have such an effect. Besides, it would be impractical to set an API level for requiring suspension of all outdoor work given the widely varied nature of outdoor work, particularly the extent of physical exertion involved, in different industries and occupations, let alone the different impacts of air pollution on different people. Nevertheless, the Labour Department would in future issue press release on days of high API reminding employers of their responsibility for ensuring safety and health of their employees working outdoors, and advising employees with heart or respiratory diseases to seek medical advice before taking up outdoor work if they are in doubt of their health condition or feel sick.

Public Accounts Committee

11. The subject of "Monitoring and reporting of air quality" was studied by the Director of Audit in his Report No. 59 ("the Audit Report") and examined by the Public Accounts Committee ("PAC"). The Audit Report points out that the existing API in Hong Kong only reflects the concentration level and health impact of the contributing pollutant while the Audit Commission's research has revealed that some overseas countries have adopted improved practices. The Audit Report has recommended that, to dovetail with the implementation of the 2014 air quality objectives, the Administration should set a time target for revamping the API reporting system, taking account of overseas practices in revamping the system.

12. In PAC Report No. 59, PAC members has expressed concerned that EPD has never achieved the performance target on API and has not disseminated to the public readily accessible information on the possible detrimental health effects that might have been caused by the upward trend of the number of days with API exceeding 100.

13. PAC members have enquired about the action plan of EPD in replacing the current API reporting system with AQHI to give more timely and relevant air quality information to the public for preventing the possible adverse health effects arising from exposure to air pollution. According to the Administration, the study team of the API review had reviewed the latest overseas practices, and made reference to the Canadian AQHI, and local health and air quality data in coming up with the new API reporting system. The new API would report the public health risks associated with excessive exposure to air pollution, and give better and more relevant information to the public for better protection from potential adverse health effects arising from excessive exposure to air pollution. EPD would report the findings and recommendations of the API review to the Panel in early 2013 and consult stakeholders on the necessary preparatory work, such as the development of a system for computing and disseminating the new API information, development of guidelines for schools and key stakeholders in response to high pollution conditions as well as publicity of the new API reporting system.

14. The Administration has also indicated that it will consider adopting more effective means to disseminate to the public the precautionary advice for roadside API exceeding 100.

Latest development

15. The Administration will consult the Panel at the forthcoming meeting on 25 February 2013 on its proposal to replace the current API reporting system with the new AQHI reporting system to address the limitations of the existing API system and give more timely and relevant air quality information to the public for preventing the possible adverse health effects arising from exposure to air pollution.

Relevant papers

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

List of relevant papers

Council/ Committee	Date of meeting	Paper
Subcommittee on Improving Air Quality	11 May 2010	<p>List of follow-up actions arising from the discussion at the meeting on 11 May 2010 (LC Paper No. CB(1)2000/09-10(01)) http://www.legco.gov.hk/yr09-10/english/panels/ea/ea_iaq/papers/ea_iaq0511cb1-2000-1-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)2619/09-10) http://www.legco.gov.hk/yr09-10/english/panels/ea/ea_iaq/minutes/iaq20100511.pdf</p> <p>Administration's response to the follow-up actions arising from the discussion at the meeting on 11 May 2010 (LC Paper No. CB(1) 2620/09-10(01)) http://www.legco.gov.hk/yr09-10/english/panels/ea/ea_iaq/papers/ea_iaq0727cb1-2620-1-e.pdf</p>
Subcommittee on Improving Air Quality	17 September 2010*	<p>Report of the Subcommittee on Improving Air Quality (LC Paper No. CB(1) 2869/09-10) http://www.legco.gov.hk/yr09-10/english/panels/ea/ea_iaq/reports/ea_iaqcb1-2869-e.pdf</p>
Audit Commission	Tabled in the Legislative Council on 14 November 2012	<p>Director of Audit's Report No. 59</p> <p>Chapter 1 - Monitoring and reporting of air quality http://www.aud.gov.hk/pdf_e/e59ch01.pdf</p>
Panel on Environmental Affairs	27 December 2012*	<p>Study report on "A Study on Air Pollution Index Reporting System" provided by the Administration (English version only) (LC Paper No. CB(1)352/12-13(01)) http://www.legco.gov.hk/yr12-13/english/panels/ea/papers/eacb1-352-1-e.pdf</p>
Public Accounts Committee	Tabled in the Legislative Council on 6 February 2013	<p>Report of the Public Accounts Committee on the Reports of the Director of Audit on the Accounts of the Government of the Hong Kong Special Administrative Region for the year ended 31 March 2012 and the Results of Value for Money Audits (Report No. 59) http://www.legco.gov.hk/yr12-13/english/pac/reports/59/59_rpt.pdf</p>

*Date of issuance of papers