

**Motion on “Improving air quality” at the
Legislative Council Meeting on 5 May 2010**

Progress Report

Purpose

At the Legislative Council meeting on 5 May 2010, the motion on “Improving air quality” moved by the Hon KAM Nai-wai as amended by Hon Audrey EU Yuet-mee and Hon Cyd HO Sau-lan was carried. Wording of the motion is at **Annex A**. This note updates Members on the follow-up actions taken in respect of the suggestions put forward by Members in the motion.

**Making the Protection of Public Health the Administration’s
Primary Policy Objective in Tackling the Problem of Air Pollution**

**Update Hong Kong’s Air Quality Objectives and Undertake to
Conduct Regular Review**

2. The public consultation on the proposed new AQOs and air quality improvement measures recommended under the AQOs Review completed in end-November 2009. We reported the findings of the consultation to the Panel on Environmental Affairs on 28 June 2010. The air quality improvement measures proposed by the AQOs Review encompass a wide range of areas covering power plants, motor vehicles, vessels, traffic and transport management, and energy efficiency improvement. Many of these are as controversial as they are complicated. It will take us some more time to develop a comprehensive strategy on how best we should take forward the air quality improvement measures and update the AQOs.

3 Meanwhile, we are taking active steps to introduce further measures to reduce emissions from major sources. In this regard, we have already expanded the controls on products containing volatile organic compounds, which are key precursors to the formation of photochemical smog, and launched a new subsidy scheme to encourage

the early replacement of Euro II diesel commercial vehicles. We have also initiated the legislative process for implementing Building Energy Codes and for introducing a ban on idling vehicles as well as extending the mandatory Energy Efficiency Labelling Scheme to other energy-consuming products. Moreover, we are making preparations to implement a district cooling system in Kai Tak to provide energy-efficient air-conditioning services, further tighten the emission caps on power plants, set up in this fiscal year a \$300 million Pilot Green Transport Fund to encourage early introduction of green transportation technologies and introduce emission control on non-road mobile machinery.

Conduct a Review on the ‘Sandstorm’ Incident and Improve the Early Warning Mechanism and Warning Signals, and Establish an Inter-departmental Mechanism to Handle Situations where the API Reaches ‘Severe’ Level

4. Subsequent to the unprecedented incident of dust plume associated with a distant sandstorm originated from Mongolia and northern China during 21 to 23 March 2010, which caused the Air Pollution Index (API) to reach the “Severe” band (API 201 to 500), we had reviewed the response system together with the concerned bureaux and departments. We have reported the findings to the Panel on Environmental Affairs’ Subcommittee on Improving Air Quality at its meeting of 11 May 2010, which are as follows-

(a) Monitoring of Serious Air Pollution Incidents

EPD will continuously monitor Hong Kong’s air quality through its air quality monitoring network. It also reports real-time General and Roadside APIs on an hourly basis and provides API forecast. API information is available on EPD’s homepage and an interactive voice recording system at 2827-8541. EPD also disseminates the latest API information report to the media through the Information Services Department on an hourly basis.

(b) **Alert and Response System**

In case of a serious air pollution incident or when it is judged that an imminent high API incident caused by dust plume is likely, EPD will issue press release or press briefing to inform the public and provide them with appropriate advice as necessary. Hong Kong Observatory will report on the low visibility associated with dust plume in its weather bulletin as appropriate.

In addition, EPD will activate a response system that will alert the concerned bureaux and departments to inform schools and service units for taking precautionary measures and to provide appropriate advice to employers and outdoor workers. The Department of Health will alert registered doctors and Chinese medicine practitioners and provide them with suggested health advice as appropriate.

At the same time, the Hospital Authority will closely monitor the attendance and admission rates of public hospitals, and will activate contingency measures as necessary to facilitate handling of large number of patients.

(c) **Mitigation of Air Pollution**

When API caused by high respirable suspended particulate level is at 'Severe' band, the Food and Environmental Hygiene Department will step up flushing of busy streets. EPD may suspend the operation of the incinerator at the Chemical Waste Treatment Centre and request the two power companies to increase the use of cleaner fuels.

(d) **Formulate Specific Guidelines for Situations under which the API Reaches 'Extremely Severe' and 'Severe' Levels**

The Government has revised the general advice to the public and susceptible groups, including those with respiratory and heart illness, children, the elderly and outdoor workers at **Annex B**.

Designate Pilot Low Emission Zones for Franchised Buses

5. Franchised buses could account for up to 40% of the traffic flow along busy corridors in Causeway Bay, Central and Mong Kok. Restricting franchised buses' access to these corridors to more environment-friendly models could bring significant improvement to the roadside air quality. In our examination of the feasibility of setting up pilot LEZs at one or more of the busy corridors and targeting at franchised buses, one of the relevant factors is the availability of sufficient cleaner buses for this purpose. There are about 2,360 buses operating along routes cutting across the above busy corridors, accounting for about 40% of the whole franchised bus fleet. If we restrict entry to the pilot LEZs to allow franchised buses of emission standards at Euro IV or better, there will be a significant shortfall of such buses because the combined bus fleet of the three franchised bus companies has in total about 160 buses meeting the said standard. Even if all these existing Euro IV or above buses are deployed to routes running through the busy corridors, there is still a shortfall of about 2,200 buses. The shortfall could be made up to a certain extent by the normal bus replacement programme scheduled for the coming years. However, there remains a need to advance the availability of a substantial number of cleaner buses for setting up pilot LEZs, particularly if they are to be set up in the short term.

6. As the cost of a new double-deck bus is about \$3 million, accelerating the pace of the Euro II bus replacement will have impacts on bus fare and operation of bus companies. Moreover, we have also come across views questioning whether it is cost-effective to phase out franchised buses in advance of the current arrangement whereby franchised buses can remain in service until 18 years of its first registration. We are therefore examining other more cost-effective options to reduce emissions from our franchised bus fleet, such as retrofitting after-treatment devices to in-use franchised buses.

7. In this regard, franchised bus companies have retrofitted their pre-Euro and Euro I buses with diesel oxidation catalysts that can reduce the particulate emissions by about 30%. They are also in the process of retrofitting their Euro II and Euro III buses with diesel particulate filters, which can reduce the emissions of particulates, hydrocarbon and carbon monoxide by about 80% or more. The retrofitting work is expected to

be completed within 2010. Moreover, we are also looking into the feasibility of retrofitting Euro II and Euro III buses with selective catalytic reduction (SCR) devices to reduce nitrogen oxides emissions from our franchised bus fleet. We are discussing with the major franchised bus companies to consider introducing a trial of retrofitting SCR to the local Euro II and Euro III franchised buses to assess the technical feasibility and emission benefits.

8. As requested by Members at the joint meeting of the Panel on Transport and Panel on Environmental Affairs on 28 May 2010, we have submitted a paper to report on the progress of the study on the feasibility of introducing pilot LEZs.

Incentive Scheme to Replace Pre-Euro and Euro I Diesel Commercial Vehicles by New Commercial Vehicles

9. The Government launched in April 2007 a one-off grant scheme to encourage early replacement of these more polluting vehicles to bring early relief to roadside air pollution. When the scheme closed at the end of March 2010, about 16,000 old vehicles were replaced by new Euro IV vehicles with funding assistance from the scheme, representing about 27% of the qualified vehicles. In addition, some 1,350 vehicle owners applied for retaining their eligibility for the grant under a special arrangement¹. Should all these vehicles be replaced, the scheme will have helped replace nearly 30% of the eligible vehicles by new ones. It is relevant to note that a total of about 7,000 pre Euro and Euro I commercial vehicles had not renewed their vehicle licence from February 2007 till April 2010.

10. We have reviewed the effectiveness of the pre-Euro/Euro I one-off grant scheme. Relying on voluntary incentive scheme alone to speed up vehicle replacement is not as effective as expected. We need to introduce suitable disincentives, such as higher licence fees for older commercial vehicles, to motivate owners to replace their aged vehicles. We thus proposed again at the Subcommittee on Improving Air Quality

¹ We have put in place a special arrangement for eligible vehicle owners who have already placed orders for new vehicles on or before the application deadline of 31 March 2010 but could not have their new vehicles delivered in time to retain their eligibility for the grant.

meeting on 10 March 2010 to increase the licence fees for aged commercial vehicles. We will follow up with the Subcommittee on this proposal and other disincentives to speed up phasing out these more polluting commercial vehicles to improve roadside air quality.

Incentive Scheme to Replace Euro II Diesel Commercial Vehicles

11. The Finance Committee of the Legislative Council has approved funding of about \$540 million on 28 May 2010 to subsidize owners of Euro II diesel commercial vehicles to replace these vehicles by new Euro IV models. The scheme commenced on 1 July 2010. The grant level for replacing Euro II vehicles is the same as that for replacing Euro I vehicles in the earlier scheme, i.e. at 18% of the taxable value of vehicle in the same vehicle class. The highest amount a vehicle owner may receive is about \$200,000.

12. We have given careful consideration to the suggestion of providing subsidies to vehicle owners for scrapping their vehicles without replacing them with new ones. The objective of the scheme is to help those commercial vehicle owners who have a continued need for the vehicles in their business operation to replace their old vehicles with more environment-friendly vehicles for better roadside air quality. Should vehicle owners decide to scrap their old vehicles without replacing them with new ones, the chances are they no longer have operational needs for the vehicles. In such circumstances, we do not consider it appropriate to provide subsidies under the scheme to vehicle owners for scrapping their vehicles.

Widely Promote District Cooling System in Areas Other Than the Kai Tak Development Area

13. The Finance Committee of the Legislative Council approved the funding application for implementation of the first District Cooling System (DCS) at Kai Tak Development. The Government is preparing the relevant works. Implementation of DCS in other development districts will be considered having regard to relevant factors including the estimated demand for air-conditioning service and the proximity of the

development districts to sea water for cooling. We will actively consider implementing the same system at other potential districts.

Review of Outline Zoning Plans for Better Town Planning and Urban Design

14. We have been reviewing the Outline Zoning Plans (OZPs) in a step-by-step manner and, where justified, revised the planning parameters to lower the development intensity. Priority is given to OZPs covering areas subject to high development or redevelopment pressure and areas of special setting and character (e.g. areas around Victoria Harbour and within view corridors to important ridgelines) which warrant particular attention.

15. The Town Planning Board (TPB) and Planning Department have already devoted a substantial amount of time and resources for the review of OZPs. The Town Planning Ordinance has clearly stipulated the public consultation process that the drafting or amendment of OZPs by TPB must follow. So far, TPB has reviewed 19 OZPs and part of three other OZPs. We will continue to progressively review the remaining OZPs.

Air Ventilation Assessment to Improve Air Ventilation

16. The Planning Department has prepared a set of design guidelines on creation of breezeways and air paths, appropriate street layout, building height variation and appropriate building disposition, for increasing wind permeability of buildings and avoiding wind blockage. The guidelines have been incorporated into the "Urban Design Guidelines" under the Hong Kong Planning Standards and Guidelines (HKPSG).

17. The Government has also issued a joint Technical Circular on Air Ventilation Assessment (AVA) for departments and bureaux to follow before commencement of major government projects, planning for new development and comprehensive redevelopment areas and formulating or

revising major town plans. Depending on individual circumstances, the Government will also conduct AVA for government sale sites to assess the impact of the development on the pedestrian wind environment.

18. Furthermore, the Planning Department is carrying out the "Urban Climatic Map and Standards for Wind Environment -- Feasibility Study", with a view to providing a more scientific and objective basis for considering air ventilation benchmarking standards and further enhancement of the air ventilation assessment system.

Strengthen the Co-operation and Co-ordination with Guangdong Province on the Improvement of Air Quality, Including Improving Mutual Notification and Early Warning Mechanisms

19. Governments of Hong Kong and Guangdong have been working closely over the years to improve air quality in the Pearl River Delta (PRD) region. According to the monitoring results of the PRD Regional Air Quality Monitoring Network for 2009, the average annual concentrations of sulphur dioxide, nitrogen dioxide and respirable suspended particulates in the PRD region decreased by 38%, 9% and 7% respectively in 2009 as compared to the 2006 levels since the operation of the Network. Moreover, the average annual concentrations of sulphur dioxide and nitrogen dioxide decreased by 26% and 7% respectively in 2009 as compared to the 2008 levels amidst continuing economic growth of the region in 2009. These reductions are attributable to the enhanced emission reduction measures being implemented by both sides, indicating that the joint efforts are bearing fruit.

20. To further improve regional air quality, under the Environmental Co-operation Agreement between Hong Kong SAR and Guangdong Province signed in August 2009, the two sides agreed to undertake a joint study on the post-2010 arrangements for air pollutant emission reduction in the PRD region, and strive to complete the study in 2010. Both sides will also step up control of pollution from motor vehicles and ships; progressively adopt fuel and emission standards for motor vehicles which are more advanced than other places in the mainland; jointly foster the research and development, manufacturing and general application of electric cars; continue to enhance the regional air quality monitoring

network and strengthen collaborative research into the relationship between ambient air quality and the formation of photochemical smog and hazy weather. On 7 April 2010, the two governments signed the Framework Agreement on Hong Kong/Guangdong Co-operation in Beijing. It provides for, inter alia, further cooperation in cross-boundary ecological conservation and environmental protection with a view to transforming the PRD into a quality living area.

Environment Bureau
13 July 2010

**Motion on
“Improving air quality”
moved by Hon KAM Nai-wai
at the Legislative Council meeting
of 5 May 2010**

Motion as amended by Hon Audrey EU Yuet-mee and Hon Cyd HO Sau-lan

That, as air quality in Hong Kong is deteriorating by the day, particularly regarding the emission of sulphur dioxide and fine suspended particulates, posing a serious threat to public health, and during the onslaught of ‘sandstorm’ earlier, many districts recorded an Air Pollution Index (‘API’) reading at the ‘severe’ level of 500; the ‘sandstorm’ has not only exposed the ‘belated awareness’ of the Administration, but also highlighted the shortcomings in its early warning mechanism; quite a number of local and overseas studies have pointed out the close relationship between the severity of air pollution and the mortality rate; in this connection, this Council requests the Administration to make protection of public health its primary policy objective in tackling the problem of air pollution, and urges it to:

- (a) immediately conduct a review on its sluggish response in this ‘sandstorm’ incident, and improve the early warning mechanism and warning signals, so as to enable members of the public to be aware of the warning messages about air quality as early as possible;
- (b) in respect of the situations where API reaches ‘extremely severe’ and ‘severe’ levels, formulate specific guidelines, including implementation of measures to suspend schools and arrange for workers who need to work outdoors for long hours to suspend work, etc. so as to protect the health of school children and the underprivileged, such as people with chronic illness, the elderly and workers working outdoors, in situations where the pollution is serious;

- (c) designate 'low emission zones' in areas with serious air pollution and restrict the entry of heavy diesel vehicles with high emissions into such zones, so as to improve air quality at the street level;
- (d) provide funding support for the franchised bus companies to scrap and replace earlier their franchised buses with high emissions, such as buses which are Euro II or below, so as to improve roadside air quality;
- (e) adopt the most stringent standards of the World Health Organization's air quality guidelines as Hong Kong's air quality objectives, and undertake to conduct regular review of the objectives in the future;
- (f) improve the 'To Replace Pre-Euro and Euro I Diesel Commercial Vehicles by New Commercial Vehicles - Incentive Scheme' and the scheme for the replacement of Euro II diesel commercial vehicles mentioned in the Budget of this year, including allowing those vehicle owners who just write off their vehicles to receive subsidies under the schemes;
- (g) strengthen the co-operation and co-ordination with Guangdong Province on the improvement of air quality, including improving mutual notification and early warning mechanisms;
- (h) in areas other than the Kai Tak Development Area, widely promote the use of district cooling system to enhance energy efficiency and achieve emission reduction;
- (i) improve town planning and urban design to improve air ventilation and reduce the accumulation of air pollutants in urban areas, such as expediting the review of the Outline Zoning Plans of various districts to revise the planning parameters, formulating 'air ventilation objectives', studying making 'air ventilation assessment' and 'air ventilation guidelines' statutory requirements, so as to strengthen the regulation of the impact of private developments on the surrounding environment; and

- (j) in respect of the situations where API reaches the 'severe' level, establish an inter-departmental mechanism to co-ordinate the work of government departments responsible for health care and social welfare etc., so as to cope with the possible additional demand for medical consultation, emergency medical treatment and primary community services, etc.

Potential Health Implications of Different Air Pollution Levels and Associated Health Advice

Air Pollution Level	API	Potential Health Implications	Health Advice		
			Advice to Public	Additional Advice to Children and the Elderly	Additional Advice to Outdoor Workers
Low	0-25	None to the general population.	No response action is required.	Nil	Nil
Medium	26-50	None to the general population.	No response action is required.	Nil	Nil
High	51-100	<p>Very few people, if any, may notice immediate health effects.</p> <p>Long-term effects may, however, be observed if you are exposed to such level for a long time.</p>	<p>No immediate response action is suggested.</p> <p>Long-term effects may, however, be observed if exposed at such level persistently for months or years.</p>	Nil	Nil

Air Pollution Level	API	Potential Health Implications	Health Advice		
			Advice to Public	Additional Advice to Children and the Elderly	Additional Advice to Outdoor Workers
Very High	101-200	<p>People with existing heart or respiratory illnesses (such as coronary heart disease and other cardiovascular diseases, asthma and chronic obstructive airways diseases including chronic bronchitis and emphysema) may notice mild aggravation of their health conditions.</p> <p>Generally healthy individuals may also notice some discomfort.</p>	<p>Persons with existing heart or respiratory illnesses are advised to reduce physical exertion and outdoor activities. They are also advised to seek advice from a medical doctor before participating in sport activities and take more breaks during the activities.</p>	<p>Children and the elderly are advised to reduce physical exertion and outdoor activities.</p>	<p>Employers are advised to assess the risk of outdoor work involving heavy manual work, and take appropriate preventive measures to protect the health of their employees, e.g. reducing physical exertion with the use of mechanical aids, and scheduling suitable rest breaks.</p> <p>Outdoor workers with existing heart or respiratory illnesses are advised to seek advice from a medical</p>

Air Pollution Level	API	Potential Health Implications	Health Advice		
			Advice to Public	Additional Advice to Children and the Elderly	Additional Advice to Outdoor Workers
					doctor if they are in doubt of their health condition or feel uncomfortable, and inform their employers of the medical advice for suitable work arrangements to be worked out.
Severe	201-500	People with existing heart or respiratory illnesses (such as coronary heart disease and other cardiovascular diseases, asthma and chronic obstructive airways diseases including chronic bronchitis and emphysema) may experience significant aggravation of their	Persons with existing heart or respiratory illnesses are advised to avoid physical exertion and outdoor activities. The general public are advised to reduce physical exertion and outdoor activities. They are also	Children and the elderly are advised to avoid physical exertion and outdoor activities.	Employers are advised to assess the risk of outdoor work, and take appropriate preventive measures to protect the health of their employees, e.g. reducing physical exertion with the use of mechanical aids, and scheduling suitable rest breaks.

Air Pollution Level	API	Potential Health Implications	Health Advice		
			Advice to Public	Additional Advice to Children and the Elderly	Additional Advice to Outdoor Workers
		<p>symptoms.</p> <p>There will be also widespread symptoms in the healthy population. These include eye irritation, wheezing, coughing, phlegm and sore throat.</p>	<p>advised to seek advice from a medical doctor before participating in sport activities and take more breaks during the activities.</p>		<p>Outdoor workers are advised to seek advice from a medical doctor if they are in doubt of their health condition or feel uncomfortable, and inform their employers of the medical advice for suitable work arrangements to be worked out.</p>

Note: As the health effects on individuals may vary, you should seek advice from a medical doctor if you are in doubt or feel uncomfortable. If you are a smoker, you should quit smoking now!