

# **立法會**

## ***Legislative Council***

LC Paper No. CB(1)969/15-16  
(These minutes have been seen  
by the Administration)

Ref : CB1/PL/EA

### **Panel on Environmental Affairs**

**Minutes of meeting**  
**held on Wednesday, 30 March 2016, at 2:30 pm**  
**in Conference Room 3 of the Legislative Council Complex**

**Members present** : Hon CHAN Hak-kan, JP (Chairman)  
Dr Hon Kenneth CHAN Ka-lok (Deputy Chairman)  
Hon Vincent FANG Kang, SBS, JP  
Hon WONG Ting-kwong, SBS, JP  
Hon Cyd HO Sau-lan, JP  
Hon Albert CHAN Wai-yip  
Hon Steven HO Chun-yin, BBS  
Hon Charles Peter MOK, JP  
Hon Kenneth LEUNG  
Hon KWOK Wai-keung  
Hon Dennis KWOK  
Dr Hon Elizabeth QUAT, JP  
Hon CHUNG Kwok-pan  
Hon Christopher CHUNG Shu-kun, BBS, MH, JP  
Hon Tony TSE Wai-chuen, BBS

**Member attending** : Hon Alvin YEUNG Ngok-kiu

**Members absent** : Hon James TO Kun-sun  
Hon TAM Yiu-chung, GBS, JP  
Dr Hon Priscilla LEUNG Mei-fun, SBS, JP  
Hon Frankie YICK Chi-ming, JP

Hon WU Chi-wai, MH  
Hon CHAN Han-pan, JP  
Ir Dr Hon LO Wai-kwok, SBS, MH, JP

**Public Officers  
attending : For item IV**

Ms Christine LOH, JP  
Under Secretary for the Environment

Mr Andrew LAI, JP  
Deputy Director of Environmental Protection (3)  
Environmental Protection Department

Mr MOK Wai-chuen, JP  
Assistant Director (Air Policy)  
Environmental Protection Department

Mr Dave HO  
Principal Environmental Protection Officer (Air Policy)  
Environmental Protection Department

**For item V**

Ms Christine LOH, JP  
Under Secretary for the Environment

Mr Andrew LAI, JP  
Deputy Director of Environmental Protection (3)  
Environmental Protection Department

Mr MOK Wai-chuen, JP  
Assistant Director (Air Policy)  
Environmental Protection Department

Mr FONG Kin-wa  
Principal Environmental Protection Officer (Mobile Source)  
Environmental Protection Department

**Clerk in attendance :** Ms Angel SHEK  
Chief Council Secretary (1)1

**Staff in attendance :** Ms Doris LO  
Senior Council Secretary (1)1

Miss Mandy POON  
Legislative Assistant (1)1

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**I. Confirmation of minutes**

(LC Paper No. CB(1)630/15-16 — Minutes of the meeting held on 21 December 2015)

The minutes of the meeting held on 21 December 2015 were confirmed.

**II. Information papers issued since last meeting**

2. Members noted that the following papers had been issued since the last meeting:

(LC Paper No. CB(1)589/15-16(01) — Administration's response to Hon Steven HO Chun-yin's letter regarding environmental impacts on Hong Kong arising from disposal of chemicals into Dasha River

LC Paper No. CB(1)670/15-16(01) — Letter dated 8 March 2016 from Hon LEE Cheuk-yan on suspected fly-tipping of construction waste and illegal landfilling in Tin Shui Wai (Chinese version only)

LC Paper No. CB(1)723/15-16(01) — Administration's response to Hon LEE Cheuk-yan's letter regarding suspected fly-tipping of construction waste and illegal landfilling in Tin Shui Wai)

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**III. Items for discussion at the next meeting**

(LC Paper No. CB(1)705/15-16(01) — List of follow-up actions

LC Paper No. CB(1)705/15-16(02) — List of outstanding items  
for discussion)

3. Members agreed to discuss the following items at the next regular meeting scheduled for Monday, 25 April 2016, at 2:30 pm:

- (a) Latest development on the work on combating climate change;  
and
- (b) Enhancing management of roadside cargo compartments.

*Issues relating to the soil fill near Kingswood Villas in Tin Shui Wai*

4. The Chairman sought members' views in respect of Mr LEE Cheuk-yan's letter requesting the Panel on Environmental Affairs ("EA Panel") to discuss issues relating to the soil fill near Kingswood Villas in Tin Shui Wai (issued on 9 March 2016 vide LC Paper No. CB(1)670/15-16(01)), and the Administration's written response on related issues (issued on 29 March 2016 vide LC Paper No. CB(1)670/15-16(01)). He informed members that the Panel on Development ("DEV Panel") and the Public Complaints Office ("PCO") had also received requests for follow-up on the issues.

5. Members in general considered it necessary for an early discussion of the soil fill incident, and attendance of officials from all relevant government bureaux and departments ("B/Ds") to facilitate a meaningful discussion. Ms Cyd HO proposed discussing the issues either at a joint meeting of the EA Panel and the DEV Panel, or at a meeting of the EA Panel at which non-EA Panel members would be invited to join the discussion. Given the larger membership size and higher quorum requirement of a joint meeting, she considered it more expedient to hold the discussion at a meeting of the EA Panel. Mr Tony TSE, Chairman of the DEV Panel, said that as the Environment Bureau ("ENB") had coordinated with relevant B/Ds on related issues, he agreed that the discussion could be held at a EA Panel meeting.

6. The Under Secretary for the Environment ("USEN") said that the soil fill near Kingswood Villas in Tin Shui Wai involved issues that straddled different bureaux/departments. That said, she did not have strong views against discussing related issues at a meeting of the EA Panel if this was for the sake of expediency.

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Admin 7. To conclude, the Chairman directed and members agreed that the soil fill incident be discussed at a meeting of the EA Panel, and all other Members of the Legislative Council ("LegCo") would be invited to join the discussion. He would work out with the Clerk the date of the relevant meeting and inform members accordingly. ENB was requested to coordinate attendance of officials from all relevant B/Ds.

*Updating of the "Pollutants in the Atmosphere and their Transport over Hong Kong" ("PATH") modelling system*

8. The Chairman sought members' views in respect of the Administration's proposal to report the updating of the "Pollutants in the Atmosphere and their Transport over Hong Kong" ("PATH") modelling system through an information paper, which was tabled at the meeting, and remove the relevant item from the Panel's list of outstanding items for discussion ("the List").

9. Mr Dennis KWOK objected to the Administration's proposal. He said that the information paper did not provide adequate information about the updating of PATH. It gave no details regarding the considerations of the relevant working group on the review of PATH, whether the views from members of the public and environmental groups were considered, nor the type of data used in the updated PATH ("PATH-2016"). Sharing similar views, the Deputy Chairman requested the Panel to discuss the item at a meeting of the EA Panel at which views from academics on PATH-2016 could be invited.

Admin 10. The Chairman directed that the relevant item be kept on the List. He requested the Administration to take note of members' views, and supplement necessary information in the discussion paper to be submitted for the item in future.

*Deteriorating water quality of the Shing Mun River and Tolo Harbour*

11. The Chairman sought members' views in respect of Mr Steven HO's letter on the deteriorating water quality of the Shing Mun River and Tolo Harbour, which was tabled at the meeting. Members agreed and the Chairman directed that a relevant item be included on the List. Members also noted that the Administration had been requested to provide a written response on the issues concerned.

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*(Post-meeting notes:*

- issues relating to the soil fill near Kingswood Villas in Tin Shui Wai were scheduled for discussion at the EA Panel's regular meeting to be held on Monday, 25 April 2016, at 2:30 pm. Members were informed accordingly vide LC Paper No. CB(1)718/15-16 issued on 6 April 2016. All other Members of LegCo were invited to join the discussion;
- as subsequently requested by the Administration, discussion of the item of "Latest development on the work on combating climate change" was deferred to May 2016;
- the Administration's information paper on "Updating the PATH Air Quality Modelling System" tabled at the meeting was circulated to members vide LC Paper No. CB(1)735/15-16(01) on 31 March 2016; and
- Mr Steven HO's letter on the deteriorating water quality of the Shing Mun River and Tolo Harbour was circulated to members vide LC Paper No. CB(1)735/15-16(02) on 31 March 2016.)

**IV. Work plan of the review of Air Quality Objectives**

(LC Paper No. CB(1)705/15-16(03) — Administration's paper on "Work Plan of the Review of Air Quality Objectives"

LC Paper No. CB(1)705/15-16(04) — Background brief on "Air Quality Objectives of Hong Kong" prepared by the Legislative Council Secretariat)

Briefing by the Administration

12. USEN briefed members on the key tasks, approach and work plan of the review of Air Quality Objectives ("AQOs").

Discussion

*Timetable for the review of AQOs*

13. Noting the Administration's plan to complete the review of AQOs and

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report on the review findings and recommendations to the Advisory Council on the Environment ("ACE") and the EA Panel in mid-2018, Mr Dennis KWOK was worried that the review schedule was too tight and unrealistic. He queried why the Administration had not planned to start the review earlier but deferring it to the second quarter of 2016. As the current term of the Government would end in June 2017, Ms Cyd HO expressed concern about whether and how consistency would be maintained in the relevant follow-up work which would straddle across the current and next terms of the Government. She considered it incumbent upon the Administration to give an interim report on the review findings and recommendations by the end of the current term of the Government.

14. The Deputy Director of Environmental Protection (3) ("DDEP(3)") explained that as the prevailing set of AQOs took effect from 1 January 2014, it was considered more appropriate and 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 to assess their impact before conducting the review. Further, taking into account the statutory requirement that a review of the AQOs should be conducted at least once in every five years, the Administration targeted at completing the current review of AQOs by mid-2018, and launching a public consultation on the review recommendations in the third quarter of 2018, such that any necessary legislative amendments to the Air Pollution Control Ordinance (Cap. 311) could be introduced in mid-2019 the earliest. USEN undertook to report the review progress to the EA Panel by the end of the current term of the Government in June 2017.

*Composition of the AQOs Review Working Group*

15. Mr Dennis KWOK enquired about the composition of the AQOs Review Working Group ("Working Group"). He asked if the Working Group would comprise experts specialized in the correlation between air quality and health. The Deputy Chairman asked if the professional bodies to be invited to join the Working Group would include those specialized in urban planning. He also enquired about the policy stance of ENB in respect of the setting up of low emission zones ("LEZs") and car-free zones, or implementation of pedestrianization scheme in the urban areas of Hong Kong.

16. DDEP(3) replied that the Working Group would include representatives from the relevant B/Ds, green groups, chambers of commerce, professional bodies, the relevant trades and academics/experts from the fields of air science and health. USEN, who would be the chairperson of the Working Group, said that the Working Group could include urban planning experts. She added that it had all along been a policy of ENB to support

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measures conducive to improving local air quality and reducing exposure of people to air pollution, including the setting up of LEZs and car-free zones, or pedestrianization in the urban areas.

Admin 17. At the request of the Deputy Chairman, the Administration agreed to provide information to the Panel on the membership of the Working Group once finalized.

*Monitoring of regional air quality and ozone concentration*

18. Ms Cyd HO enquired about the mechanism of collaboration between the Hong Kong and the Mainland Governments on measures to improve the air quality of the Pearl River Delta ("PRD") region. She asked whether the Working Group would be tasked with such work, and how it could deal with the differences in the air quality standards between Hong Kong and the Mainland.

19. DDEP(3) replied that the Hong Kong-Guangdong Joint Working Group on Sustainable Development and Environmental Protection had all along facilitated cross-boundary environmental collaborations between the Hong Kong and the Mainland Governments. Among other initiatives, both Governments agreed to set emission reduction targets for four key air pollutants, namely sulphur dioxide ("SO<sub>2</sub>"), nitrogen oxide ("NO<sub>x</sub>"), respirable suspended particulates and volatile organic compounds ("VOCs") in Hong Kong and the PRD region for 2015 and 2020.

20. Referring to Annex E of the Administration's paper which showed the emission targets for Hong Kong and the PRD region, Mr Tony TSE queried why no emission reduction target was specified for ozone ("O<sub>3</sub>"). Expressing concern over the rising concentration of O<sub>3</sub>, Mr Kenneth LEUNG enquired about the reasons why during the period between 2011 and 2015, the percentage increase in O<sub>3</sub> concentration recorded at roadside air quality monitoring stations (i.e. 46%) was much higher than that at general stations (i.e. 10%). Apart from regional collaborations, he asked whether there were any local measures for mitigating the O<sub>3</sub> concentration problem in Hong Kong.

21. The Assistant Director (Air Policy) ("AD(AP)") explained that O<sub>3</sub> was not a pollutant directly emitted from man-made sources, but was formed by photochemical reactions of primary pollutants such as NO<sub>x</sub> and VOCs emitted in the whole PRD region under sunlight. As such, the Administration had been closely collaborating with the Guangdong Provincial Government on mitigating O<sub>3</sub> pollution by reducing NO<sub>x</sub> and VOCs emissions. Given its regional dimension, O<sub>3</sub> monitored at general and roadside stations should be



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at similar levels. However, at the roadside, NO<sub>x</sub> emitted from motor vehicles would react with O<sub>3</sub> to form nitrogen dioxide ("NO<sub>2</sub>"), thereby removing O<sub>3</sub>. Because of such O<sub>3</sub> scavenging effect, O<sub>3</sub> concentration at the roadside was normally lower than those at the general stations. However, after various air quality improvement measures had been implemented in recent years, they had been effective in reducing vehicle emissions, including NO<sub>x</sub> emission, thereby weakening the O<sub>3</sub> scavenging effect and leading to the relatively higher percentage increase of O<sub>3</sub> concentrations recorded at roadside stations.

*Monitoring of district air quality*

22. Mr Albert CHAN commented that a more precise and detailed approach should be adopted for monitoring and analyzing the air quality of individual districts to include both hourly and annual average concentrations of pollutants by district and by pollution sources, with a view to facilitating a more focused review of the effectiveness of air quality improvement measures. In particular, he expressed concern about the air pollution problem in Tung Chung, especially during summer time, that had posed serious health risks to Tung Chung residents. He was worried that the problem would be worsened with the developments in Tung Chung East and Tung Chung West.

23. DDEP(3) said that owing to its geographical location, Tung Chung was more susceptible to regional ozone pollution when the prevailing winds were westerlies or north-westerlies. He said that following the collaborative efforts of Hong Kong and the Guangdong Provincial Government in reducing air pollutant emissions in the PRD region, the number of days with Air Quality Health Index ("AQHI") at "High" or above level for Tung Chung in 2015 was less than that of 2014.

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24. At the request of Mr Albert CHAN, the Administration agreed to provide information on:

- (a) analysis of the hourly/annual average concentrations of air pollutants in Tung Chung as recorded by the Tung Chung Air Quality Monitoring Station, including the major sources of the pollutants, the average and maximum exceedance of each type of pollutants based on the prevailing AQHI and/or AQOs; and
- (b) in the light of the analysis in (a) above, an assessment of whether and how the existing measures to reduce air pollution in Tung Chung were appropriate.

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(*Post-meeting note*: a submission from Clean Air Network (LC Paper No. CB(1)734/15-16(01)), which was tabled at the meeting, was circulated to members on 30 March 2016.)

**V. Trial of hybrid buses by franchised bus companies — interim report**

(LC Paper No. CB(1)705/15-16(05) — Administration's paper on "Interim Findings of the Trial of Hybrid Franchised Buses"

LC Paper No. CB(1)705/15-16(06) — Updated background brief on "Trial of hybrid buses by franchised bus companies" prepared by the Legislative Council Secretariat)

Briefing by the Administration

25. USEN briefed members on the interim findings of the trial of six hybrid franchised buses. She highlighted that a key focus of the trial was the environmental performance of the hybrid franchised buses in terms of pollutant emission and fuel economy, etc. in local conditions. By far the interim findings up to 30 November 2015 did not show evidence of the hybrid franchised buses outperforming their conventional diesel counterparts in the overall environmental performance.

Discussion

*Interim findings on environmental performance of hybrid buses*

26. Mr Tony TSE enquired about the expected benefits of introducing hybrid buses in Hong Kong. Given the differences between the conditions of Hong Kong and those of overseas places, he opined that the benefits of using hybrid buses in overseas places might not be similarly and ideally applicable to Hong Kong.

27. DDEP(3) replied that overseas experiences suggested that hybrid buses could emit less air pollutants and be more fuel efficient. For example, the test in the United Kingdom suggested that hybrid buses could save about 20%-30% fuel compared to conventional diesel buses. That said, due to the

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unique conditions in Hong Kong, the hybrid buses had to be tailored to meet local needs, including a larger bus size with three axles, and installation of an electricity-driven air conditioning system with sufficient cooling capacity. As such, there could be discrepancies in the performance of these hybrid buses *vis-à-vis* those used overseas.

28. Noting that the Administration had used conventional diesel buses of Euro V standard as control buses to assess the performance of hybrid buses in the trial, Mr Kenneth LEUNG asked why it had not used diesel buses that met the tighter Euro VI emission standards for the comparison. AD(AP) explained that the first prototype Euro VI diesel bus would only be available in Hong Kong in the second half of 2016. The Administration would use this new Euro VI diesel bus for comparison with the hybrid buses when available.

29. The Chairman noted from the interim findings that the hybrid buses on trial consumed on average 3.4% more fuel than the diesel control buses, and 14.7% more fuel in the worst case. He enquired about the factors affecting the hybrid buses' fuel saving performance in Hong Kong, and whether the Administration had compiled statistical information on how the use of hybrid buses could help reduce carbon emission.

30. In reply, AD(AP) explained that the discrepancies in the fuel saving performance of hybrid buses between Hong Kong and overseas places could largely be attributable to the local hot and humid weather. He said that the air conditioning system could consume up to 40% of the energy of the hybrid buses in summer, while their fuel efficiency was found to be better in cooler months when the loading on the air conditioning system was lower.

31. On Dr Elizabeth QUAT's enquiry, AD(AP) advised that the hybrid bus manufacturer was aware of the high energy consumption of the air conditioning system and was taking various measures, including replacing the compressors of the air conditioning system by smaller ones, and fine-tuning the control of the air conditioning compressors, to improve energy efficiency.

32. The Deputy Chairman urged the Administration to keep track of the performance of the hybrid buses before and after the manufacturer had made the improvements, and include relevant records and analyses in the final trial report. He also asked if the Administration had considered liaising with the franchised bus companies to adjust upward the temperature level of the air conditioning on the hybrid buses to save energy.

33. AD(AP) responded that maintaining a suitable temperature having regard to energy saving and thermal comfort of passengers was important

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irrespective of the drivetrains of the buses. As for the trial, the respective temperatures of the air conditioning on the hybrid buses and the control diesel buses should preferably be maintained at the same level to facilitate comparison.

*Selection of trial routes*

34. The Deputy Chairman asked if the Administration had selected different types of routes in the trial with a view to testing the suitability and performance of hybrid buses operating along long and short distance routes, uphill and downhill road sections, as well as on highways and in urban areas.

35. AD(AP) affirmed that different routes had been included in the trial. Generally speaking, the hybrid buses operating on highway routes tended to use more fuel, while more frequent start-stop operations on urban routes could allow the hybrid buses to save fuel by running their diesel engines less often. More detailed analyses would be conducted upon collection of more data for a longer period of time.

*Costs of hybrid buses*

36. Pointing out that the purchasing cost of hybrid buses (i.e. about \$5.5 million for each hybrid bus) was much higher than that of conventional diesel buses (i.e. about \$3 million for each diesel bus), Mr WONG Ting-kwong asked about whether the operating costs of hybrid buses, including fuel and maintenance costs, were also higher than that of their diesel counterparts. He was concerned that the maintenance costs might not be fully reflected upon the end of the two-year trial period. Mr WONG also asked about the life expectancy of the car battery of hybrid buses, as the cost of replacing the battery would constitute a major part of the overall costs.

37. AD(AP) envisaged that mass production of hybrid buses might possibly bring down their costs in future. While agreeing that the maintenance costs could not be fully reflected by the end of the two-year trial period, he said that as the engine of a hybrid bus was smaller than that of its diesel counterpart, the maintenance costs should be relatively lower. As regards the battery, AD(AP) said that its service life was about five to six years as claimed by the hybrid bus manufacturer, and a five-year warranty for battery was provided.

*Way forward*

38. Given that the interim findings of the trial did not show promising benefits of using hybrid buses in Hong Kong, Mr Kenneth LEUNG asked

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whether and when the Administration would consider introducing other low emission options like Euro VI diesel buses and electric buses. Dr Elizabeth QUAT asked if the Administration would consider testing other alternatives simultaneously instead of waiting for the final results of the hybrid bus trial. The Chairman asked about the policy direction and timetable, if any, for introducing electric vehicles for all public transportation.

39. AD(AP) responded that it was premature at this stage to conclude whether hybrid buses were suitable for Hong Kong after just one year of trial. As mentioned earlier at the meeting, the Administration had already reflected the problems found in the trial so far to the manufacturer for making improvements. USEN supplemented that the Administration would keep an open mind on improving roadside air quality by all viable means, and would undertake trials of different new technologies as appropriate. For instance, it had progressively started a trial on 36 electric single-decked buses by franchised bus companies and would report the outcomes to the EA Panel in due course.

40. The Chairman urged the Administration to take heed of members' views and concerns when taking forward the hybrid bus trial at the next stage. He also suggested the Administration to, where applicable, include in the final trial report a comparison of the use of hybrid buses in other places with similar weather conditions, like Shenzhen, Singapore and Malaysia. DDEP(3) undertook to include such comparison in the final trial report.

**VI. Any other business**

41. There being no other business, the meeting ended at 4:00 pm.