立法會
Legislative Council

LC Paper No. CB(1)720/18-19
(These minutes have been seen by the Administration)

Ref : CB1/PL/EA

Panel on Environmental Affairs

Minutes of meeting
held on Wednesday, 19 December 2018, at 10:45 am
in Conference Room 3 of the Legislative Council Complex

Members present	**:**	Dr Hon Junius HO Kwan-yiu, JP (Chairman) Hon HUI Chi-fung (Deputy Chairman) Hon CHAN Hak-kan, BBS, JP Dr Hon Priscilla LEUNG Mei-fun, SBS, JP Hon Steven HO Chun-yin, BBS Hon Frankie YICK Chi-ming, SBS, JP Hon WU Chi-wai, MH Hon CHAN Chi-chuen Hon Kenneth LEUNG Hon Dennis KWOK Wing-hang Dr Hon Elizabeth QUAT, BBS, JP Ir Dr Hon LO Wai-kwok, SBS, MH, JP Hon CHU Hoi-dick Hon SHIU Ka-fai Hon YUNG Hoi-yan Hon Tanya CHAN Hon Kenneth LAU Ip-keung, BBS, MH, JP Hon Tony TSE Wai-chuen, BBS
Members absent	**:**	Hon KWOK Wai-keung, JP Hon Martin LIAO Cheung-kong, SBS, JP Hon CHUNG Kwok-pan

Public Officers attending	**:**	**For item V** Mr TSE Chin-wan, BBS, JP Under Secretary for the Environment Mrs Alice CHEUNG, JP Deputy Director of Environmental Protection (3) Environmental Protection Department Mr Dave HO Assistant Director (Air Policy) Environmental Protection Department Dr MAK Shing-tat Principal Environmental Protection Officer (Mobile Source) Environmental Protection Department **For item VI** Mr TSE Chin-wan, BBS, JP Under Secretary for the Environment Mrs Alice CHEUNG, JP Deputy Director of Environmental Protection (3) Environmental Protection Department Mr Dave HO Assistant Director (Air Policy) Environmental Protection Department Dr Kenneth LEUNG Acting Principal Environmental Protection Officer (Air Science) Environmental Protection Department
Clerk in attendance	**:**	Ms Angel SHEK Chief Council Secretary (1)1

Staff in attendance : Mr Jason KONG
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)276/18-19 — Minutes of the policy briefing held on 22 October 2018)

The minutes of the meeting held on 22 October 2018 were confirmed.

II. Information papers issued since last meeting

2. Members noted that no information paper had been issued since last meeting.

III. Items for discussion at the next meeting

(LC Paper No. CB(1)319/18-19(01) — List of follow-up actions

LC Paper No. CB(1)319/18-19(02) — List of outstanding items for discussion)

3. Members agreed to discuss the following items at the next regular meeting scheduled for Monday, 28 January 2019, at 2:30 pm:

(a) promoting the use of electric vehicles ("EVs"); and

(b) review of wild pigs management strategies.

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IV. Matters arising from the meeting on 25 June 2018

Proposal for conducting an overseas duty visit

Relevant papers

(IN04/17-18	—	Information note on "Feed-in tariff for solar power in selected places" prepared by the Research Office of the Legislative Council Secretariat
FS01/18-19 and FS02/18-19	—	Fact sheets on "Management of plastic waste in selected places" and "Management of restored landfills in selected places" prepared by the Research Office of the Legislative Council Secretariat
LC Paper No. CB(1)1058/17-18(01)	—	Letter dated 28 May 2018 from Hon HUI Chi-fung on the proposal to conduct an overseas duty visit to study recycling facilities and operations (Chinese version only)
LC Paper No. CB(1)319/18-19(03)	—	Extracts from the minutes of the meeting of the Panel on Environmental Affairs on 25 June 2018)

4. At the Panel meeting on 25 June 2018, some members suggested the Panel conduct a duty visit in the 2018-2019 legislative session to study overseas experiences in (a) the development of recycling facilities (in particular those for recycling of waste plastics) and the recycling industry; (b) development of renewable energy and feed-in tariff; and/or (c) development and management of restored landfills. To facilitate further consideration of the proposed overseas duty visit at the current meeting, the

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Chairman drew members' attention that the Research Office of the Legislative Council ("LegCo") Secretariat had prepared an information note on "Feed-in tariff for solar power in selected places" (IN04/17-18), a fact sheet on "Management of plastic waste in selected places" (FS01/18-19) and a fact sheet on "Management of restored landfills in selected places" (FS02/18-19). He supplemented that the Panel conducted overseas duty visits in 2006, 2013 and 2014 to study, among other things, overseas experiences in different aspects of waste management, and the destinations of those visits included Europe, Japan and the Republic of Korea. In view of the recent implementation of the Feed-in Tariff ("FiT") Scheme in Hong Kong, he suggested that the Panel study the development of renewable energy ("RE") (in particular solar energy) during the proposed overseas duty visit.

5. Mr CHU Hoi-dick, Mr CHAN Hak-kan, the Deputy Chairman and Ms Tanya CHAN said that they did not object to the Chairman's suggestion. They expressed further views as follows:

(a) Mr CHU suggested visiting Copenhagen, which was the top-ranking city in the Global Green Economy Index perception survey, to study its strategies for combating climate change, including RE development;

(b) Mr CHAN remarked that he had visited Wuhu of Anhui province in 2018 to study a solar energy project and a poverty alleviation programme (which involved the installation of distributed RE systems on farmhouses) that were run by a Hong Kong-listed company. He could provide relevant information to the Panel for reference if necessary. While he did not have any preference regarding the destination of the proposed visit, he suggested that the visit programme might be enriched by including some other environment-related matters such as waste management as secondary themes, in addition to RE as the main theme; and

(c) the Deputy Chairman and Ms CHAN considered that the destination of the proposed visit should have successful experience in promoting the development of distributed RE systems in the community, so that the visit programme would be more relevant to the implementation of the FiT Scheme in Hong Kong. They expressed concern that the vast majority of the solar capacity in the Mainland was from large-scale solar farms, and hence the Mainland's experience might be less relevant. Ms CHAN said that Seoul might be considered for the proposed

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overseas duty visit, as the city had implemented various community-based initiatives to promote distributed RE development, such as the Solar Power Generation Citizens' Fund. She also shared the view that the visit programme might be enriched by including secondary themes.

6. Taking into account the above members' views, the Chairman concluded that the Panel should conduct a duty visit to the Mainland to study the development of RE, and in particular the development of small-scale solar energy projects in the community. He instructed the Secretariat to explore the feasibility of incorporating other themes (e.g. waste management, management of restored landfills, etc.) to enrich the visit programme. The duty visit was tentatively scheduled for the Easter holidays from 19 to 22 April 2019.

Clerk

(*Post-meeting note*: At the Panel meeting on 25 February 2019, members agreed to reschedule the proposed duty visit for July 2019 to avoid a clash with a joint-Panel duty visit to the major cities in the Yangtze River Delta Region conducted by four other Panels from 21 to 24 April 2019.)

V. Improvement of roadside air quality

(LC Paper No. CB(1)319/18-19(04) — Administration's paper on "Progress on Improving Roadside Air Quality"

LC Paper No. CB(1)319/18-19(05) — Updated background brief on "Measures to improve roadside air quality" prepared by the Legislative Council Secretariat

LC Paper No. CB(1)356/18-19(01) — Submission from Hong Kong Vehicle and Transport Concern Group (Chinese version only))

Briefing by the Administration

7. The Under Secretary for the Environment ("USEN") briefed members on the following new initiatives proposed by the Administration for improving roadside air quality:

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(a) phasing out Euro IV diesel commercial vehicles ("DCVs");

(b) trial of retrofitting Euro IV and Euro V double-deck franchised buses with enhanced selective catalytic reduction systems, which could bring the emission performance of those buses to Euro VI level;

(c) tightening the emission standards of first-registered motorcycles, light buses (design weight of more than 3.5 tonnes) and buses (design weight of not more than 9 tonnes); and

(d) review of the scope of the Pilot Green Transport Fund ("PGTF") with a view to promoting the wider use of green innovative transport technologies that had been proved to be relatively mature and suitable for adoption locally.

Discussion

General issues

8. Mr WU Chi-wai considered that the Environment Bureau ("ENB")/Environmental Protection Department ("EPD") should strengthen its coordination with the Transport and Housing Bureau ("THB") and Transport Department ("TD") so that the environmental protection principles could be better integrated into the transport policy; and the Administration should promote the use of public transport as far as possible to reduce reliance on private cars ("PCs"). Otherwise, the efforts to improve roadside air quality would be undermined by the continued growth of the local vehicle fleet. Mr Dennis KWOK and the Deputy Chairman shared Mr WU's views. Mr WU suggested that representatives from THB/TD should be invited to join the Panel's discussion on improving roadside air quality in future.

9. USEN responded that promoting the use of public transport had been a central plank of the Administration's transport policy, and ENB had discussed with THB/TD the measures to improve roadside air quality. As commercial vehicles accounted for about 95% of the total vehicular emissions of respirable suspended particulates ("RSP") and nitrogen oxides ("NOx") in Hong Kong, these vehicles were a major target of the measures to improve roadside air quality. At the same time, the Administration encouraged PC owners to switch to electric private cars ("e-PCs") through first registration tax ("FRT") concessions, on the premise that the concessions would not fuel the growth of the PC fleet. The Administration considered that the "One-for-One Replacement" Scheme was able to strike a balance

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between promoting the use of e-PCs and controlling PC growth.

Promoting the adoption of new energy vehicles

Policy direction and targets

10. Mr CHAN Hak-kan commented that the various measures to improve roadside air quality had been implemented haphazardly, which failed to provide an effective solution to roadside air pollution. He considered that the general adoption of EVs, which had no tailpipe emission, would be able to improve roadside air quality enormously. However, the Administration's policies on promoting the use of EVs were inconsistent. For example, there was insufficient financial incentive for PC owners to switch to e-PCs (a case in point was the low participation rate in the "One-for-One Replacement" Scheme), and the ancillary facilities for EVs had remained inadequate.

11. Dr Elizabeth QUAT shared the above opinion concerning the financial incentive for e-PCs, and criticized the lack of progress in upgrading public EV chargers to quick chargers. She asked about the policy direction and targets regarding the promotion of e-PCs.

12. Mr Tony TSE also commented that the improvements to roadside air quality brought by past measures were not readily observable.

13. The Deputy Chairman considered that one of the major reasons for the slow adoption of e-PCs in Hong Kong was the insufficient choices of mass-market e-PC models.

14. USEN reiterated that commercial vehicles had all along been a major target of the measures to improve roadside air quality. The Administration would continue to explore electric commercial vehicle ("e-CV") models that were suitable for adoption locally through PGTF, and would conduct a review of the scope of PGTF with a view to further facilitating the use of new energy vehicles by the trades. The Steering Committee on the Promotion of Electric Vehicles, which was chaired by the Financial Secretary and comprised representatives from the Government and the transport trades, would also continue to explore measures to promote the use of EVs in Hong Kong. Moreover, ENB had been conducting a review of EV-related policies and measures jointly with other relevant bureaux/departments. A key issue covered in the review was how to further promote the development of ancillary facilities for EVs. The Administration would brief the Panel on its latest plan and progress of promoting the use of EVs at the meeting on 28 January 2019.

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15. As regards financial incentives for the adoption of e-PCs, USEN advised that a buyer of a mass-market e-PC (with a taxable value not higher than $377,500) would not need to pay any FRT for the vehicle if he/she participated in the "One-for-One Replacement" Scheme. It was envisaged that with the advancement of the e-PC technologies, more mass-market models would be available on the Hong Kong market in future.

16. Mr CHAN Hak-kan and Mr Tony TSE enquired whether the Administration had set any targets for the proportions of EVs in the local vehicle fleet for different types of vehicles, such as PCs, franchised buses and taxis. Mr Dennis KWOK said that the Civic Party supported the promotion of EVs and considered that the Administration should set a blueprint in this regard. Dr Elizabeth QUAT asked about the types of new energy vehicles considered to have the potential to replace conventional vehicles.

17. USEN advised that the Administration's long-term goal was that all vehicles newly registered in Hong Kong would ultimately become new energy vehicles. New energy vehicles were not confined to EVs, as other new transport technologies (such as hydrogen fuel cell technology) were being developed. As different types of technology would require different supporting infrastructure, the Administration would continue to monitor the development of those technologies, and seek to identify new energy vehicle models that were suitable for local operations through PGTF and other measures, before deciding the way forward.

18. Mr CHAN Hak-kan pointed out that Hong Kong lagged behind Shenzhen in the use of e-CVs, as all public buses and taxis in Shenzhen had already been replaced by EVs. Mr Tony TSE enquired about the constraints limiting the adoption of EVs by the local taxi trade.

19. USEN advised that taxis in Hong Kong generally operated round-the-clock and could not spend several hours daily for charging. The electric taxis that were once tested out under PGTF had been re-registered as PCs due to their limited driving ranges and long charging time. It was envisaged that electric taxis would become a viable option for Hong Kong if they could have a driving range of above 500 to 600 km after a full charge and the charging time could be greatly reduced.

Phasing out conventional private cars

20. The Deputy Chairman sought explanation on why the Administration did not set a target year for banning the first registration of conventional PCs that solely used petrol or diesel. He was of the view that such a target, if set, could encourage car manufacturers to supply to Hong Kong more mass-

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market new energy vehicle models.

21. USEN responded that places that had set a timetable or targets for a total ban on the sale of conventional PCs generally had a local automotive industry, and such a timetable and targets were set to facilitate the business planning of the manufacturers. As Hong Kong was a relatively small market for PCs, it was unlikely that any target set locally at this stage could significantly influence the business decisions of overseas car manufacturers. The Administration was collating relevant information from the said places, including the work plan of car manufacturers in producing new energy vehicles, and would take it into account when exploring the way forward. As regards the proposal for ceasing the first registration of diesel PCs, the Administration considered it practicable to set a timetable given that Hong Kong's regulation of diesel PCs had been more vigorous compared to other places. That said, the implementation of the proposal would be subject to the outcome of consultation to be conducted with relevant stakeholders.

Trial of single-deck electric franchised buses

22. The Chairman enquired about the progress of the trial of single-deck electric franchised buses and considered that a target should be set for the number of electric franchised buses to be used in Hong Kong. In addition, he and Dr Elizabeth QUAT suggested that the Administration should launch new initiatives expeditiously to encourage franchised bus companies to test out more electric bus models.

23. Mr CHAN Hak-kan considered that the trial scheme was ineffective in promoting the use of electric buses, as none of the franchised bus companies had made follow-up investments after the completion of the trials.

24. Mr CHAN Chi-chuen expressed disappointment about the unpromising results of the completed trials.

25. USEN and the Deputy Director of Environmental Protection (3) ("DDEP(3)") responded that:

(a) the Administration had fully subsidized franchised bus companies to acquire 36 single-deck electric buses for conducting two-year trials to test out their performance, reliability and economic feasibility in local conditions. The trials of some electric buses had completed, while those of the remaining ones were ongoing or to be commenced;

(b) it was found that the driving ranges of those electric buses were

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reduced by Hong Kong's hilly terrain, high air-conditioning demand, and frequent starting and stopping under the local operational mode. The preliminary trial results indicated that the general adoption of single-deck electric buses by the franchised bus companies would hinge on factors such as the battery capacity of such buses;

(c) although the models tested out were not suitable for replacing conventional diesel buses, the trial results would be useful for improving the designs of the vehicles. The Administration would continue to work closely with bus manufacturers and the franchised bus companies to explore the introduction of single-deck electric bus models with improved designs into Hong Kong; and

(d) about 95% of franchised buses in Hong Kong were double-deck buses, and the replacement of such buses by EVs was subject to the availability of double-deck electric bus models that could meet local operational needs.

26. The Chairman suggested that, pending the maturity of the double-deck electric bus technologies, franchised bus companies might use more single-deck electric buses in place of double-deck diesel buses at this stage for the benefit of better roadside air quality.

27. Quoting paragraph 11 of Annex D to the Administration's paper (LC Paper No. CB(1)319/18-19(04)), Mr CHAN Chi-chuen asked why the actual driving ranges of the electric buses under trial fell far short of the driving range claimed by the manufacturer, including whether the manufacturer had provided false description of the performance of those buses.

28. USEN and the Assistant Director (Air Policy) ("AD(AP)") explained that the information on driving range provided by the bus manufacturers was derived from their local testing cycles. Given the hilly terrains and high air conditioning demand in hot and humid summer in Hong Kong, both of which caused the consumption of more energy, it was not uncommon that the driving range of an electric bus under real-world driving conditions of Hong Kong was lower than that under the bus manufacturers' testing conditions.

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29. As the request of Mr CHU Hoi-dick, the Administration undertook to provide supplementary information on the estimated reduction in the emissions of NOx and RSP in 2025 from the current emission levels assuming that all franchised buses would be electric buses, compared to the

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scenario where all Euro IV and Euro V double-deck franchised buses would be retrofitted with enhanced selective catalytic reduction systems.

(*Post-meeting note*: The Administration's response was circulated to members on 30 January 2019 vide LC Paper No. CB(1)537/ 18-19(02).)

30. Mr CHU Hoi-dick asked about the reason for re-tendering two battery-electric buses of New Lantao Bus Company (1973) Limited and the manufacturer(s) involved in the initial tendering process. AD(AP) responded that the manufacturer, Great Dragon International Corporation Limited, had withdrawn its tender after it was selected in the initial tendering process. As such, the contract for the two buses had to be re-tendered.

31. The Chairman enquired about the definition of "on-road breakdown" in Appendix II of Annex D to the Administration's paper. AD(AP) explained that an on-road breakdown referred to the failure of a passenger-carrying bus which necessitated passenger evacuation, except breakdowns owing to road accidents.

Charging facilities for electric vehicles

32. Noting that the Hong Kong Planning Standards and Guidelines ("HKPSG") had set out the target that 30% of the PC parking spaces in new buildings would have EV charging facilities, Mr Tony TSE enquired about the actual number of functioning EV chargers installed in the car parks of new buildings since the above amendment to HKPSG, with a breakdown by charger type (i.e. standard, medium or quick charger). USEN responded that the Administration would provide the information at the next regular meeting when the Panel would discuss the item "Promoting the use of EVs".

Review of Pilot Green Transport Fund

33. Mr Frankie YICK declared interest as a director of The "Star" Ferry Company Limited, which had benefited from PGTF. He welcomed the Administration's proposal to review the subsidy levels and limits on the number of applications for each type of technology under PGTF. He also pointed out that the existing subsidy was meagre compared to the capital expenditure on a new ferry, and hence it was very difficult for The "Star" Ferry Company Limited, whose fares were regulated, to afford the replacement of old ferries with new ones for improving environmental performance.

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Phasing out Euro IV diesel commercial vehicles

34. Mr SHIU Ka-fai relayed the trades' views and suggestions on the proposal to phase out Euro IV DCVs as follows:

(a) Euro IV DCVs in use were mostly purchased during the period from 2007 to 2012, and they normally had a service life of 13 to 15 years. To minimize the impact on the trades' operations, the replacement deadline of the last batch of Euro IV DCVs should be the end of 2025 instead of 2023;

(b) the ex-gratia payment levels for scrapped vehicles should be higher than the levels under the existing programme for phasing out pre-Euro IV DCVs, as Euro IV DCVs generally cost more than the pre-Euro IV ones;

(c) there were insufficient vehicle body builders to cope with the spikes in assembly of vehicle bodies near the application deadlines for ex-gratia payments under the existing programme for phasing out pre-Euro IV DCVs. The proposed programme for phasing out Euro IV DCVs should be paced carefully to avoid repeating the same problem; and

(d) the Administration should maintain close communication with all relevant stakeholders, including vehicle maintenance workshops, on the implementation details of the proposed programme.

35. USEN took note of the trades' views above and assured members that it would continue to discuss the proposal with the relevant stakeholders with a view to ensuring a smooth implementation of the programme. In considering the levels of ex-gratia payments to be offered, the Administration would seek to strike a balance between providing sufficient incentives to DCV owners and ensuring prudent use of public money.

Tightening emission standards

36. Mr Frankie YICK called on the Administration to ensure that there would be sufficient supply of compliant vehicles of different models on the market before deciding on the effective dates of the tightened emission standards of first-registered motorcycles, light buses (design weight of more than 3.5 tonnes) and buses (design weight of not more than 9 tonnes). USEN assured Mr YICK that the Administration would take the above into account

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when preparing the implementation proposals.

Other issues

Promoting the use of bicycles

37. The Deputy Chairman remarked that at the Council meeting of 14 June 2017, a motion on "Formulating a bicycle-friendly policy and designating bicycles as a mode of transport" with 19 recommendations was passed. He expressed disappointment that there was no mention of promoting the use of bicycles as a means of improving roadside air quality in the Administration's paper. He requested the Administration to explain its plan in this regard.

38. The Chairman pointed out that the item of "existing policies on bicycles and promoting bicycles as a mode of transport as an initiative to improve roadside air quality" was currently on the Panel's list of outstanding items for discussion. He considered that relevant issues should be discussed under the item at a future meeting. USEN advised that the Administration would provide the information in the paper to be submitted for the discussion on the item.

Control of fugitive dust emissions from dump trucks

39. In response to Mr Tony TSE's question, USEN advised that fugitive dust emissions from dump trucks were controlled by the Air Pollution Control (Construction Dust) Regulation (Cap. 311R). Mr Frankie YICK opined that the said regulation was not strictly enforced as he observed that the mechanical covers of certain dump trucks were non-operational or poorly maintained. He urged the Administration to step up monitoring of the compliance situation and take enforcement actions where necessary. USEN responded that EPD would take enforcement actions if the operation of dump trucks caused air pollution. He undertook to provide supplementary information on the control of fugitive dust emission caused by dump trucks and how to ensure the proper maintenance of truck covers, including the relevant legislation and the government department(s) involved in the enforcement of the legal requirements.

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(*Post-meeting note*: The Administration's response was circulated to members on 30 January 2019 vide LC Paper No. CB(1)537/ 18-19(02).)

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Air quality of semi-confined public transport interchanges

40. Expressing concern about the poor ventilation and air quality of some semi-confined public transport interchanges ("PTIs"), Dr Elizabeth QUAT asked how the Administration would tackle the problem. USEN advised that EPD had issued a Practice Note for Professional Persons – Control of Air Pollution in Semi-Confined Public Transport Interchanges ("Practice Note"), which provided guidelines on aspects such as design and maintenance of the ventilation systems of semi-confined PTIs. The Administration would take follow-up actions upon receiving public reports on poor air quality of PTIs.

41. Mr Frankie YICK pointed out that it generally took a long time for the Administration to rectify ventilation problems in PTIs as the follow-up work straddled various government departments and might involve tender procedures for procurement of equipment, etc. Mr YICK and the Chairman urged the Administration to enhance the efficiency of such follow-up work. The Administration took note of the members' views. In response to the Chairman's further question, AD(AP) advised that the Administration was conducting a review of the Practice Note.

Tackling ozone problem

42. Mr CHU Hoi-dick enquired about the measures taken/to be taken to tackle ozone pollution, apart from tightening the emission standards of first-registered motorcycles for reducing the emissions of volatile organic compounds ("VOCs"), which were one of the major pollutants contributing to the formation of ozone.

43. USEN advised that there were various emission sources of VOCs including transport and non-combustion sources, and the latter were mainly VOC-containing products such as paints, organic solvents and consumer products. Since the introduction of the Air Pollution Control (Volatile Organic Compounds) Regulation (Cap. 311W) in 2007, there had been a significant reduction in the VOC emissions from non-combustion sources. Ozone was formed by complex photochemical reactions of VOCs and other substances in the atmosphere. To tackle the ozone problem, the Administration had been working with the Guangdong Provincial Government in monitoring and controlling the emissions of major pollutants concerned.

Review of Air Quality Objectives

44. Dr Elizabeth QUAT sought confirmation on whether the

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Administration planned to tighten the annual Air Quality Objective ("AQO") for fine suspended particulates ("FSP") from 35 microgram per cubic metre ("μg/m^3") to 25 μg/m^3 as reported by the media. USEN responded that having studied the current situation and the possible new air quality improvement measures, the Air Quality Objectives Review Working Group considered that there was room for tightening the AQOs for FSP and sulphur dioxide. The Administration would report the findings of the AQOs review and the recommendations to the Panel in due course and launch a public consultation on the proposed tightening of AQOs. After completing the public consultation, the Administration would consider views collected and consult the Advisory Council on the Environment and the Panel on the way forward.

Evaluating air quality impact of public works

45. Mr Dennis KWOK asked about the method to evaluate the air quality impact of public works under the environmental impact assessment ("EIA") studies. USEN and AD(AP) responded that each EIA study would include a baseline study on the existing air quality of the site concerned and the surrounding areas. In line with international practices, the air quality impact of public works on air sensitive receivers would be evaluated by simulation through computer modelling.

Closing remark

46. The Chairman enquired about the legislative timetable for tightening the emission standards of first-registered motorcycles, light buses (design weight of more than 3.5 tonnes) and buses (design weight of not more than 9 tonnes). USEN advised that the Administration planned to complete the drafting of the amendment regulation in the second half of 2019.

VI. Three Dimensional Air Pollution Monitoring System

(LC Paper No. CB(1)319/18-19(06) — Administration's paper on "Establishing a Three-dimensional Air Pollution Monitoring Network")

Briefing by the Administration

47. USEN advised that local air quality was affected by ozone, RSP and FSP from the Pearl River Delta ("PRD") Region, and such pollutants could be formed all over the region through the conversion of various primary

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pollutants in the atmosphere. The current air quality monitoring stations ("AQMSs") in Hong Kong could only measure air quality near ground level. In order to have a better understanding of the air pollutants' transport mechanism, thereby helping to improve air quality modelling, the Administration proposed acquiring five sets of light detection and ranging ("LiDAR") systems to establish a three-dimensional ("3-D") air pollution monitoring network in the territory.

Discussion

48. The Chairman reminded members that in accordance with Rule 83A of LegCo's Rules of Procedure ("RoP"), they should disclose the nature of any direct or indirect pecuniary interests relating to the funding proposal under discussion at the meeting before they spoke on the item. He also drew members' attention to Rule 84 of RoP on voting in case of direct pecuniary interest.

Functions and locations of the proposed systems

49. Mr Tony TSE and Ir Dr LO Wai-kwok sought explanation on how the data obtained by the proposed LiDAR systems could contribute to the improvement of Hong Kong's air quality.

50. AD(AP) explained that the Administration used computer models to estimate how the emissions of air pollutants would affect air quality. The computer modelling was based on estimated emission data of various air pollution sources and calibrated using ground-level air pollutant concentration and meteorological data gathered by AQMSs, meteorological monitoring stations, etc. As ozone and suspended particulates could be formed in the atmosphere, the accuracy of the computer models was limited without data on air pollutant concentration at higher altitude and pollutant transport information. The proposed LiDAR systems could provide such information, which could be assimilated into the existing air quality modelling system to improve air quality prediction ability and accuracy. With a better understanding on how ozone and suspended particulates were formed and transported in the region, the Administration would be able to devise more targeted measures for reducing emissions at source.

51. The Chairman enquired how the visualized data generated by the proposed LiDAR systems, which was exemplified in Annex III to the Administration's paper (LC Paper No. CB(1)319/18-19(06)), would be interpreted. USEN and AD(AP) explained that the LiDAR systems would show the concentrations of air pollutants in the scanned area in real time. The animation sequence of such images would be able to indicate the

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locations at which photochemical reactions occurred, as well as how ozone and suspended particulates formed by the photochemical reactions were transported.

52. Mr Tony TSE and Ir Dr LO Wai-kwok enquired how the locations of the five monitoring sites would be determined and whether their geographical coverage would be sufficient.

53. AD(AP) and the Acting Principal Environmental Protection Officer (Air Science) ("Atg PEPO(AS)") advised that EPD planned to set up four monitoring sites at the periphery of Hong Kong to capture the properties of air plumes entering and leaving the territory. The fifth site would be located in the middle of the territory to monitor the impact of buildings in urban areas on microclimate and pollutant dispersion. USEN supplemented that EPD would make reference to international standards when it considered the locations of the monitoring sites.

54. Ir Dr LO Wai-kwok asked about the distribution and major functions of the existing AQMSs. AD(AP) responded that the existing air quality monitoring network comprised 13 general AQMSs and three roadside AQMSs. Their design, locations and quality control/quality assurance procedures were in line with internationally-recognized standards, including United States Environmental Protection Agency's guidelines. Those stations could collect representative information on the concentrations of major air pollutants near ground level.

Regional collaboration

55. Mr Tony TSE, the Chairman and Ir Dr LO Wai-kwok asked whether the Administration would collaborate with the Guangdong authorities in tackling the ozone and suspended particulates problems in the region, including whether the Guangdong authorities would set up their own 3-D air pollution monitoring network using similar equipment to collect data complementary to that obtained by Hong Kong's LiDAR systems.

56. USEN and DDEP(3) responded that the governments of Hong Kong and Guangdong had been collaborating on improving regional air quality, including setting emission reduction targets for 2020 and jointly operating a PRD Regional Air Quality Monitoring Network. The Guangdong Provincial Government was also setting up a similar 3-D air pollution monitoring network in its province. It was envisaged that the data obtained by the 3-D air pollution monitoring networks of both places could complement the joint efforts in VOC monitoring to tackle the ozone problem, as well as support the setting of post-2020 emission reduction measures and targets for the region.

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57. The Chairman sought information on the locations of the 3-D air pollution monitoring sites to be set up in Guangdong province. Atg PEPO(AS) advised that the locations were not decided at this stage.

58. Mr Tony TSE enquired whether the Administration would consider collaborating with more provinces in the Mainland and neighbouring countries/places to maximize the effectiveness of the regional monitoring network. USEN responded that as far as peak ozone and photochemical smog were concerned, the primary pollutants mostly originated from an area with a radius of several hundred kilometres. Therefore, collaboration with Guangdong province would be sufficient for tackling the ozone and photochemical smog problems in Hong Kong.

Conclusion

59. The Chairman concluded that Panel members were supportive of the Administration's submission of the funding proposal to the Finance Committee.

VII. Any other business

60. There being no other business, the meeting ended at 12:40 pm.

Council Business Division 1
Legislative Council Secretariat
15 March 2019