Confirmed Minutes of the 234th Meeting
of the Advisory Council on the Environment (ACE)
held on 3 December 2018 at 2:30 pm

Present:
Mr Stanley WONG, SBS, JP (Chairman)
Prof Nora TAM, BBS, JP (Deputy Chairman)
Dr Billy HAU
Dr HUNG Wing-tat, MH
Dr Michael LAU
Prof Kenneth LEUNG, JP
Ir MA Lee-tak, SBS
Prof John NG
Dr Eric TSANG
Ir Conrad WONG, BBS, JP
Mr Simon WONG, JP
Prof WONG Sze-chun, BBS, JP
Prof Jonathan WONG, MH, JP
Mrs Alice CHEUNG, JP (Secretary)

Absent with Apologies:
Ir Cary CHAN, JP
Prof LAU Chi-pang, JP
Ms Julia LAU
Prof Albert LEE
Mr Andrew LEE
Ir Prof Irene LO, JP
Mr Anthony LOCK
Ir Michelle TANG
Mr Luther WONG, JP

In Attendance:

Ms Lily YAM	Assistant Director of Planning/Technical Services, Planning Department (PlanD)
Mr Simon CHAN	Assistant Director (Conservation), Agriculture, Fisheries and Conservation Department (AFCD)
Miss Heidi LIU	Principal Information Officer, Environmental Protection Department (EPD)

Ms Becky LAM	Chief Executive Officer (CBD), EPD
Miss Dora CHU	Executive Officer (CBD) 1, EPD
Miss Carman LEUNG	Executive Officer (CBD) 2, EPD

In Attendance for Item 3:

Mr Roger WONG	Assistant Director/Development, Water Supplies Department (WSD)
Mr LAM Shing-tim	Chief Engineer/Development (2), WSD
Ms Kirstie CHENG	Senior Engineer/Research & Development (Acting), WSD
Mr Raymond CHAN	Senior Engineer/Research & Development (Acting), WSD

In Attendance for Item 4:

Mr Dave HO	Assistant Director (Air Policy), EPD
Dr MAK Shing-tat	Principal Environmental Protection Officer (Mobile Source), EPD

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Action

The Chairman welcomed Members to the meeting and informed that apologies of absence had been received from Ir Cary Chan, Prof Lau Chi-pang, Ms Julia Lau, Prof Albert Lee, Mr Andrew Lee, Ir Prof Irene Lo, Mr Anthony Lock, Ir Michelle Tang and Mr Luther Wong.

Item 1 : Confirmation of the draft minutes of the 233rd meeting held on 5 November 2018 (Closed-door session)

2. The draft minutes were confirmed without amendment.

Item 2 : Matters arising (Closed-door session)

3. The Chairman informed Members that the draft resolutions for the early implementation of municipal solid waste (MSW) charging and other environmental initiatives in the 2018 Policy Address were circulated to Members for comments on 19 November 2018, and the revised resolutions with a Member's suggestions incorporated were issued to the Director of Environmental Protection on 26 November 2018.

Action

4. In reply to a Member's enquiry on the progress and schedule of the review of the technical assessments for the Environmental Impact Assessment (EIA) process and relevant Guidance Notes and guidelines arising from the discussion at the last ACE meeting, Mrs Alice Cheung said that the subject team had been reminded to provide an update to Members regarding the progress of the review and the relevant information in due course. Secretariat

Item 3 : Public Consultation on Supply of Recycled Water in Hong Kong
(ACE Paper 15/2018)

5. The Chairman informed that *ACE Paper 15/2018* briefed Members of the public consultation being conducted on the supply of recycled water in Hong Kong from 19 October to 17 December 2018 and invited Members' views on the proposal.

6. Upon the invitation of the Chairman, a Member declared that he was engaged in the ecological surveys for irrigation reservoirs with WSD which had no relevancy to the item to be discussed. Another Member declared that he was the former Director of Water Supplies when the Total Water Management Strategy was promulgated. A Member declared that he was a Member of the Advisory Committee on Water Supplies. The meeting agreed that the three Members could stay on and continue participating in the discussion.

[The presentation team joined the meeting at this juncture.]

Presentation cum Question-and-Answer Session (Open session)

7. Mr Roger Wong gave an opening remark and Ms Kirstie Cheng briefed Members on the background, applications, benefits, planning, key proposals and public consultation details on the supply of recycled water in Hong Kong with the aid of a PowerPoint presentation.

Supply of recycled water and the potential risks

8. In response to a Member's written comment that the recycled water should be used for toilet flushing (flushing) only, while the use of recycled water for other non-potable purposes such as car washing and street cleansing should be

implemented upon a thorough assessment of the potential health impact and implementation of control measures, Mr Roger Wong explained that WSD intended to supply colour-labelled recycled water to the public for flushing only, while recycled water without colour-labelling would be supplied for other permitted non-potable uses such as landscape irrigation, street cleansing, water features and car washing by the Government departments only where the risks of cross-connection and/or misuse could be effectively controlled and minimised.

9. A Member supplemented that the concerned assessment should also cover identification of any negative impacts of the use of recycled water for landscape irrigation on plantings, birds and butterflies with a view to controlling and minimising any potential adverse consequences. He opined that the assessment of health risks should not be limited to human, but also other organisms such as birds and butterflies. He suggested WSD conduct a thorough assessment on the impact of the ecological system with the use of recycled water for landscape irrigation and publish the assessment report on the impact of the ecological system with the use of recycled water for landscape irrigation for public reference if available to ease public concerns.

10. A Member supplemented that the assessment mentioned by another Member was called ecological risk assessment. He considered that it would be more convincing if relevant assessment had been conducted and proved that the ecological risk was low and therefore suggested WSD conduct such assessment.

11. Mr Roger Wong referred Members to the consultation document on supply of recycled water in Hong Kong which was published and uploaded to WSD website. He elaborated that WSD proposed adopting a multiple-barrier approach, including but not limited to proposing legislative amendments and specifying recycled water quality standards to regulate and control the use of recycled water in order to control and minimise the health risks arising from misuse of recycled water.

12. A Member considered that there was potential to use recycled water for construction purposes if good control and monitoring mechanism was introduced and were looking forward to the development. Mr Roger Wong assured that the Government had duly considered all the potential risks to environmental hygiene and public health for the use of recycled water in Hong Kong.

Action

13. A Member expressed support to the supply of recycled water in Hong Kong. She reminded WSD to present clearly to the public that the recycled water to be supplied was limited to non-potable purposes only and therefore would not meet the quality standards of drinking water. She also suggested WSD make reference to the successful experience of using reclaimed water from Sha Tin STW and Tai Po STW for landscape irrigation to convince the public that use of recycled water for landscape irrigation was safe for ecological system. Moreover, she agreed that water quality standards of the recycled water should be prescribed with a view to convincing the public that the recycled water was safe for permitted non-potable uses.

14. A Member asked whether the recycled water would be used for industrial and construction purposes. He also enquired on the quantities of three types of recycled water namely reclaimed water, treated grey water and harvested rainwater that would be supplied in Hong Kong.

15. Mr Roger Wong said that recycled water could be used for industrial processes but the use of recycled water for construction purposes were not as common as other non-potable uses from overseas experience, but WSD would keep in view the latest development of the use of recycled water and explore any possible non-potable uses of recycled water in the future. With the expansion and upgrading of the Shek Wu Hui STW to tertiary treatment level, Mr Wong advised that reclaimed water would be supplied to Northeast New Territories for non-potable uses starting with Sheung Shui and Fanling from 2022 onwards. The supply of reclaimed water was estimated to save about 21 million cubic metres (m^3) of fresh water each year. For treated grey water, he said that WSD planned to construct a centralised grey water recycling system at the Anderson Road Quarry development site to supply about 1 million m^3 of recycled water for non-potable uses each year. He explained that the supply of treated grey water might be limited to New Development Areas (NDAs) in view of the costly modification works to retrofit the grey water collection system in the existing buildings to capture grey water from sewage. With regard to the harvested rainwater, a sizable storage tank was required for stable supply of harvested rainwater. He said that the rainwater was being collected in Happy Valley underground stormwater storage tank for flushing and landscape irrigation.

Action

Charge for use of recycled water

16. Addressing a Member's comment that the use of recycled water for flushing should be free of charge, Mr Roger Wong explained that the free-of-charge supply of flushing water was a basic service for sanitation and the production cost for flushing supplies was met by the contribution from rates. As the recycled water was another lower-grade water supplied for flushing, the free-of charge arrangement for the use of recycled water for flushing similar to that of the use of sea water for flushing might be applied. He also supplemented that as recycled water was a new water resource for the public, the free-of charge arrangement for the use of recycled water for flushing would provide incentive for the public to use recycled water in lieu of fresh water for flushing.

17. A Member further suggested that the charge for use of recycled water for permitted non-potable uses other than flushing should be comparable to that of potable water. While expressing a view that the free-of-charge arrangement for recycled water would be welcomed by the public, another Member suggested WSD consider charging the use of recycled water in order to ensure water sustainability in Hong Kong.

18. In line with the "polluter-pays" principle, a Member opined that recycled water should be charged so that the general public would become more aware of their responsibilities on environmental protection. Mr Roger Wong replied that the charge of recycled water for other permitted non-potable uses might make reference to that of potable water.

Prevention of misuse of recycled water

19. Addressing a Member's comment that all precautions including labelling and colouring of recycled water should be taken to prevent possible misuse of recycled water. Mr Roger Wong stated that WSD proposed adopting a multiple-barrier approach, on top of specifying the recycled water quality standards, to prevent misuse of recycled water. In addition to the use of colour-labelled recycled water (i.e. addition of food-grade dye, Acid Blue 9, to recycled water) to make recycled water discernible to fresh water, Mr Wong advised that legislative amendments under Waterworks Ordinance (Cap. 102) and Waterworks Regulations (Cap. 102A) were the foremost barrier to regulate and

control the use of recycled water on uses other than the permitted use (i.e. flushing and other uses as permitted by the Water Authority (WA)). Moreover, other preventive measures included the use of pipes with distinctive features, issue of guidelines on connection procedures, operation and maintenance manual for the recycled water supply system, and introduction of the risks of cross-connections to the public and relevant stakeholder via promotions and education.

Water quality standards of recycled water

20. A Member opined that the WSD should provide the quality standards of recycled water to public for reference with a view to convincing the public that recycled water was safe for non-potable uses.

21. Mr Roger Wong advised that the recycled water quality standards had been shown in the "Technical Specifications on Grey Water Reuse and Rainwater Harvesting", which was available on WSD website. The water quality standards of recycled water included 11 numbers of parameters and were formulated with reference to the recycled water quality standards in different countries, including Mainland China, the United States of America and United Kingdom and previous pilot schemes of using reclaimed water in Hong Kong. He said that the relevant information would be uploaded to WSD website for reference in due course.

22. In response to a Member's enquiry about the quality standards of recycled water, Mr Roger Wong said that the recycled water to be supplied by WSD would meet the water quality standards prescribed for permitted non-potable uses but were not up to that of the drinking water in Hong Kong. Nevertheless, the standard of *E.coli* of recycled water was the same as that of drinking water.

Cost effectiveness of recycled water supply

23. While expressing appreciation towards the plan of WSD to supply recycled water in Hong Kong with a view to saving fresh water and minimising the impacts of effluent discharge to the environment, a Member enquired on the percentage of sea water being supplied and recycled water to be supplied to the total water consumption in Hong Kong. He also questioned whether the use of recycled water in lieu of sea water for flushing would be more cost-effective.

24. Mr Roger Wong advised that the sea water supply network covered about 85% of the total population in Hong Kong and the sea water for flushing accounted for about 20% of the total water consumption in Hong Kong. The major use of recycled water in Hong Kong was to replace fresh water for flushing and there was about 7.9% of fresh water consumption was being used for flushing. When opportunities arose, such as construction of new STW or upgrading of existing STW to tertiary treatment level in the future, the use of recycled water instead of sea water for flushing might be justified with due considerations to the cost effectiveness.

Promotion and publicity of recycled water

25. The Chairman shared past experience in his residential area of reusing the treated sewage effluent for landscape irrigation and considered that the purpose of using recycled water was defeated when the private sewerage system was connected to the public sewerage system.

26. A Member remarked that with the concept of green buildings, on-site water recycling should be encouraged.

27. A Member considered the supply of recycled water in Hong Kong would have potential for further development. He understood that the Government would mainly consider the cost effectiveness and environmental benefits in planning of the supply of recycled water. Just like the plan to supply reclaimed water for flushing use in Northeast New Territories but not for other areas because of the opportunity arising from the upgrading of Shek Wu Hui STW to tertiary treatment level by the Drainage Services Department (DSD). In order to encourage further development on the use of recycled water, he suggested WSD put more effort to the promotion of the use of recycled water by parties other than WSD, especially for the use of treated grey water in hotel industry and commercial buildings.

28. A Member considered that the design, construction, operation and maintenance of grey water recycling and rainwater harvesting systems were easier than that of wastewater recycling system, with reference to the overseas experiences. More publicity and educational programmes should be carried out to encourage educational organisation, including universities, and secondary schools,

and non-governmental organisations to install on-site grey water recycling and/or rainwater harvesting systems in new or redeveloped buildings. She also considered that only requirements for the control of the recycled water quality standards should be imposed in order to avoid weakening the inherent incentives for the non-government parties from installing on-site water recycling system.

29. While expressing support towards recycled water supply, a Member opined that some standards and guidelines should be implemented to encourage private parties to adopt grey water recycling and/or rainwater harvesting system. Other than water conservation, he suggested WSD should emphasis on promoting the importance of sustainable development and minimisation of treated sewage effluent discharge to the receiving water bodies.

30. Mr Roger Wong advised that the Government had been advocating the adoption of grey water reuse system and/or rainwater harvesting system in suitable Government works projects. A joint technical circular on Green Government Buildings had been issued by Development Bureau and Environment Bureau in 2015 to require the utilisation of grey water recycling and/or rainwater harvesting to reduce fresh water demand for non-potable uses as far as practicable. At present, there were about 80 Government buildings equipped with grey water reuse and/or rainwater harvesting systems. As for private buildings, WSD made use of the assessment tools in the Building Environmental Assessment Method Plus for Existing Buildings Version 2.0 issued by the Hong Kong Green Building Council to encourage the adoption of grey water reuse and/or rainwater harvesting systems by awarding bonus credits to private buildings with these systems.

31. Two Members enquired on the potential coverage of recycled water supply in the future. One of the Members further suggested WSD consider expanding the supply of recycled water to the areas where flushing need was currently met by the use of fresh water, including the village houses in the North District.

32. In addition to the supply of recycled water to nearby buildings at Shek Wu Hui STW and Anderson Road Quarry development site, Mr Roger Wong explained that recycled water would be supplied in NDAs, especially in those areas if the supply of recycled water would be more cost-effective than the supply of sea water. Regarding the supply of treated grey water, it could be promoted in NDAs where separated waste and soil pipe systems could be designed and constructed to recycle

grey water. He said that WSD would in collaboration with other Government departments, in particular the DSD, to explore the wider use of recycled water in the future.

Conclusion

33. The Chairman thanked the subject team for their presentation and detailed explanations. He summarised the views of Members and concluded that Members were in general support to the proposal.

[The presentation team left the meeting at this juncture.]

Internal Discussion Session (Closed-door session)

34. A Member was concerned about the difficulties of recycled water supply in areas other than NDAs. He therefore suggested WSD consider incorporating water recycling in the new development projects to enhance the use of the recycled water in the future.

35. Since additional energy and resources were needed in recycled water supply, a Member considered that WSD should enhance the public awareness of the cost involved so as to encourage them on water conservation.

Item 4 : Progress on Improving Roadside Air Quality
(ACE Paper 16/2018)

36. The Chairman informed that *ACE Paper 16/2018* briefed Members on the latest progress of the series of measures being implemented to improve roadside air quality, and sought Members' views on the proposed additional measures.

37. Upon the invitation of the Chairman, a Member declared that he was one of the assessors in the trials of various vehicle models under the Pilot Green Transport Fund (PGTF). The meeting agreed that the Member could stay on and continue participating in the discussion.

[The subject team joined the meeting at this juncture.]

Presentation cum Question-and-Answer Session (Open session)

38. Mr Dave Ho gave an opening remark and with the aid of a PowerPoint presentation, Dr S T Mak briefed Members on the statistics and trends of roadside air quality, key current vehicle emission control measures and proposed new initiatives.

New energy vehicles

39. Addressing a Member's written comments, Mr Dave Ho thanked the Member for his support for the proposed new initiatives to strengthen vehicular emission control. He agreed with the Member that the use of electric commercial vehicles (e-CVs) should be promoted given that commercial vehicles accounted for about 95% of the total vehicular emissions of respirable suspended particulates (RSP) and nitrogen oxides (NO_X). Mr Ho explained that the technology of electric private cars (e-PCs) was now quite mature and the performance and driving ranges of e-PCs were comparable with those of conventional vehicles. In contrast, the technology of e-CVs was still under development and existing models on the market could yet to fully meet the local operational needs. The high production costs, limited service life, long charging time and low energy density of the batteries were the key constraints of e-CVs to become popular. Notwithstanding the above, the Government had accorded priority to promoting the use of e-CVs through various initiatives, including the introduction of the full First Registration Tax (FRT) waiver and the Pilot Green Transport Fund (PGTF). The PGTF subsidised the testing of green innovative technologies including electric and hybrid vehicles, and the subsidy per vehicle amounted to the price premium between an alternative-fuelled and a conventional vehicle. The installation of related support systems including charging facilities was also eligible to a subsidy of up to 50% of the setting up cost.

Use of new energy vehicles in the public transport sector

40. Mr Dave Ho informed that the Government had fully subsidised franchised bus companies to purchase 36 single-deck electric buses, of which 26 battery-electric buses and four supercapacitor buses had already commenced operation. The remaining electric buses were expected to be put into service progressively. A task force had been set up to monitor and assess the performance

of the electric buses. The two-year trial of the first batch of five battery-electric buses manufactured by BYD Auto Industry Company Limited was completed in May 2018. Given the hilly terrain in Hong Kong and the need to have intense air-conditioning during the hotter seasons, these electric buses could only sustain a driving range of about 190 kilometers (km) in winter and 150 km in summer, which could not cope with the daily mileage of franchised buses of about 200 to 300 km. He advised that new models with an improved battery capacity of 30% would be subject to further trials. Furthermore, to make the best use of the electric buses, bus routes suitable for the operation of electric buses would be identified and the installation of charging facilities in certain depots or bus stops to enable top-up charging during daytime would be considered.

41. Mr Dave Ho mentioned that public light buses (PLBs) that ran on fixed routes, i.e. the green minibuses, normally operated between public transport interchanges (PTIs) or minibus termini with relatively short journeys as compared with franchised buses. If charging facilities that supported quick charging could be provided at the PTIs or minibus termini, there was good potential for green minibuses to use electric PLBs (e-PLBs). To encourage the introduction of e-PLBs, the Government would commission a consultancy study to set the charging protocol/standards for e-PLBs and identify suitable locations for installation of the charging facilities for facilitating trial of e-PLBs.

42. As regards light goods vehicles, Mr Dave Ho said that quite a number of operators had expressed an interest in joining the trials for electric light goods vehicles (e-LGVs) under the PGTF. Various e-LGV models had already been tested and the users were in general satisfied with the performance of the vehicles. There had been rapid technological advancements in the production of e-LGVs, and a number of new models with an improved driving range of 60% to 90% had been launched in 2018. It was anticipated that the driving range of the e-LGVs would further improve and their payload would become comparable to that of their conventional counterparts.

43. Mr Dave Ho further informed that trials of various electric taxis under PGTF had been conducted. Results showed that the models under trial did not have a high enough driving range to support the round-the-clock operation of taxis and a taxi under normal operation could not spare four hours per day for charging.

Action

44. A Member commended EPD's proactive efforts in tackling the challenges associated with promoting the use of new energy vehicles. He opined that the Government should play an important role in overcoming major barriers and creating favourable conditions for the wider acceptance and adoption of e-CVs. He pointed out that, as bus and light bus terminals and stops were located in either Government or privately owned land, the installation of charging facilities at these locations would not be possible without Government's support. The promotion of the use of e-PCs, on the other hand, could be left to the market forces. In view of the currently rising oil prices, the Member considered that the present market situation might be a good opportunity to promote e-CVs given that the more stable and cheaper supply of electricity could incentivise the transport trades to switch to e-CVs. The Government should seize the opportunity and provide the necessary supporting infrastructure, including charging facilities, to drive the use of e-CVs as soon as practicable. Subsidies could also be provided to taxi fleet owners to install their own charging facilities at fixed shift-change locations. With adequate top-up charging facilities, it would not be necessary for e-CVs to have very high driving range. He suggested that a working group should be formed to address and resolve the obstacles that hindered the widespread adoption of e-CVs.

45. A Member expressed appreciation towards EPD's achievements in driving significant improvements in roadside air quality. He agreed with another Member that the Government played an important role in promoting the use of e-CVs, for instance, by exploring the feasibility of providing roadside charging facilities. For promoting the wider use of e-CVs, he also considered that it would be vital for relevant transport trades to embrace necessary adjustments to their operations, such as by increasing the size of their fleets to provide buffer for deploying e-CVs while some were under re-charging. Considering that electric taxis had already been in use in many overseas countries, the Member opined that the Government should identify the local constraints and explore whether it was possible to make necessary arrangements to go around the constraints, such as by making use of the shift-changing time. He further suggested the Government review and adjust the tax on petrol and diesel with a view to discouraging the use of conventional vehicles.

46. A Member noted that there were spatial constraints in developed areas for installing charging facilities. To pave the way for the use of new energy vehicles in future, he considered it necessary to include requirements on the setting up and

management of necessary supporting infrastructure when tendering for the planning and design of NDAs and potential development areas (PDAs). Mr Dave Ho replied that the Government was working in this direction to ensure adequate space for the installation of supporting infrastructure for e-CVs at the PTIs of NDAs and PDAs.

Electric private cars

47. A Member pointed out that many overseas countries, including some European countries and the Mainland, had set out timetables for a total ban on the sales of cars running on internal combustion engines. He observed that there were great challenges in encouraging the public to use new energy vehicles, especially when the Government decided to cap the FRT concession for e-PCs instead of granting a full waiver as in previous years. Furthermore, there were inadequate charging facilities and e-PCs were often associated with significantly higher insurance premiums. With such setbacks, he noted that many e-PC owners were in fact looking for resale opportunities, especially for e-PC owners of one particular brand that offered buy-back guarantee. He considered that Hong Kong should be more proactive in resolving the problems with a view to promoting and improving the experience of using new energy vehicles. He also suggested the Government explore the feasibility of developing smart mobility solutions, for instance, making use of in-vehicle systems connected to the network to provide real-time information, such as on traffic conditions and parking availabilities.

48. While there were currently more than 2,000 public chargers in Hong Kong, Mr Dave Ho acknowledged that there was a need to further strengthen the support for use of e-PCs. An inter-departmental task force had been formed to explore ways to enhance the development of charging facilities, including installing more chargers in Government car parks. The Government had also granted gross floor area (GFA) concessions to encourage developers to put in place electric vehicle (EV) charging-enabling infrastructure in car parks of new private buildings, such that parking space owners would not be hindered from installing the required EV chargers due to constraints in respect of power supply capacity, cabling and conduits, etc. Furthermore, EPD had conducted a pilot scheme at some Government premises to assess the reliability of outdoor charging facilities and, subject to the assessment of the traffic flow and conditions, explore the feasibility of providing such facilities for on-street parking spaces.

49. Mr Dave Ho said that the decision to cap the FRT concession for e-PCs was made with reference to overseas practice, where the tax concession would be reduced when the technology had matured and more economical models were produced. He explained that a full waiver would encourage consumers to purchase a more luxurious brand and thus discourage the production of mass market models for the Hong Kong market. Subsequent to capping the FRT concession and introducing the one-for-one replacement scheme, he advised that there were now more economical brands available on the Hong Kong market and this would, in the long run, be conducive to popularising the use of e-PCs.

50. The Government noted that several places had set out timetables or targets for a total ban on the sales of private cars solely using petrol or diesel. To consider the feasibility of enacting legislation to phase out conventional vehicles in Hong Kong, Mr Dave Ho advised that EPD was collating information on the specific plans and measures to be taken by these places and the work plan of various manufacturers in producing new energy vehicles to ascertain the availability of new energy vehicles suitable for use in Hong Kong.

Hybrid vehicles

51. Replying to a Member's enquiry regarding the fuel economy and emissions of hybrid vehicles, Mr Dave Ho advised that both depended heavily on the driving pattern and traffic conditions. While significant fuel saving and reduced emissions could be achieved for driving with frequent start-stops by running with the electric motor instead of the engine, hybrid vehicles offered little benefit in highway driving given that the vehicle would typically run completely on fuel without using the electric motor. Considering that private cars in Hong Kong typically had a low daily mileage, e-PC should be able to sustain a whole day's journey after a full charge. The Government had therefore accorded priority to the promotion of e-PCs given that they offered zero emission of air pollutants.

Roadside air quality monitoring

52. In reply to a Member's question on the number and distribution of roadside air quality monitoring equipment, Mr Dave Ho advised that currently the air quality monitoring network consisted of 13 general stations and three roadside stations. Annual review would be conducted to study the distribution and

locations of the stations and the effectiveness of air quality monitoring, taking into account factors such as population changes and changes in pollution sources. In view of the rapid development in the Southern District and North District, the Government was planning to set up a new general station in each of these two districts. He explained that the general stations covered the major areas of Hong Kong, with a view to reflecting the air quality that most of the public were exposed to in different districts in Hong Kong. On the other hand, the three roadside stations were set up at busy traffic corridors in built-up urban areas with a large number of pedestrians and restricted air dispersion, which aimed to provide air quality information to those who stayed near busy roadside for prolonged periods. These three roadside stations were in Causeway Bay, Central and Mongkok, covering the more densely built-up and most common types of land use in urban areas, including commercial, commercial-cum-residential and financial areas, etc.

New technology

53. A Member expressed support for the existing and new measures for improving roadside air quality. He suggested the Government keep in view of overseas practices and latest technologies for possible applications to the local context. For example, the development and installation of roadside air purifiers could be considered at locations prone to severe air pollution.

54. Mr Dave Ho informed that the Government was open to the use of new technologies, such as roadside air purifiers, to mitigate the impacts of air pollution. Priority would however be given to reducing emissions from pollution sources which would be more effective in bringing about territory-wide and long term improvements to the air quality.

Conclusion

55. The Chairman summarised the views of Members and thanked the subject team for their presentation and explanations.

[The subject team left the meeting at this juncture.]

Internal Discussion Session (Closed-door session)

56. With reference to the question raised by another Member earlier on the use of hybrid vehicles, a Member advised that the battery in hybrid vehicles added significant weight to the vehicle and reduced the size of the gasoline engine, which resulted in lower energy efficiency especially when navigating hilly terrains. Furthermore, the presence of dual engine, including the gasoline engine and the electric motor, implied higher maintenance costs. He also observed that many drivers were reluctant in using the eco-mode of hybrid vehicles given that under such a mode the engine would be automatically turned off when stopping at traffic lights. Plug-in hybrids, on the other hand, had a larger battery which allowed the coverage of longer distance by electric power. He agreed with another Member that the Government could consider promoting the use of plug-in hybrids in Hong Kong.

57. Addressing another Member's comment on the significantly higher insurance premiums associated with electric vehicles, a Member explained that the possible needs to replace expensive specialist parts used in electric vehicles led to higher insurance costs. Insuring one electric vehicle would inevitably be expensive unless the automobile manufacturers were willing to collaborate with insurance companies to offer insurance packages for consumers.

58. For the widespread acceptance of e-CVs, a Member opined that it was important for relevant transport trades to embrace the top-up charging concept. He suggested the Government provide assistance to the trades in establishing a financial model for the deployment of e-CVs.

59. Mrs Alice Cheung said that EPD had touched base with insurance companies and automobile manufacturers, and understood that the insurance premiums had been raised significantly for only one of the electric vehicle brands, and the insurance premiums for other brands were relatively stable. She aspired that with more economical models offered by different brands on the market, more people would switch to e-PCs.

60. Mrs Alice Cheung also drew Members' attention to Annex B of the paper which showed the 2016 air pollutant emission inventory by road transport in Hong Kong. By referring to the inventory, Members could better understand the rationale behind the additional measures proposed by the Government. She advised that priority was accorded to reducing emissions from commercial vehicles

given that commercial vehicles were accountable for more than 90% of RSP emissions. Amongst commercial vehicles, franchised buses and public light buses contributed to 18% and 9% of the total RSP emission respectively. In this connection, the Government had been proactively exploring ways to promote the use of electric buses and public buses, including but not limited to subsidising trials of new models, identifying suitable routes for their use, developing a set of unified quick-charging protocol etc. At the same time, the Government planned to provide around $38 million to fully subsidise the franchised bus companies to conduct a trial to retrofit about 60 Euro IV and V double-deck franchised buses of the dominant bus models with enhanced selective catalytic reduction (SCR) systems with a view to reducing emissions.

Item 4 : Any other business (Closed-door session)

61. As this was the last meeting of the current term, the Chairman took the opportunity to thank Members for their valuable contributions to the Council in the past two years, and closed the meeting by wishing all Members a Merry Christmas and a Prosperous and Green 2019.

62. There was no other business for discussion at the meeting.

Item 5 : Date of next meeting (Closed-door session)

63. The Chairman advised Members that an induction session would be arranged for new ACE members in January 2019 and the first ACE meeting of the new term was scheduled on 4 February 2019. Members would be advised on the agenda in due course.

[Post meeting notes: The induction session for new ACE members was arranged on 14 January 2019. As there were no proposed agenda items for discussion, the ACE meeting scheduled on 4 February 2019 was cancelled. The first ACE meeting of the new term was scheduled on 4 March 2019.]

ACE Secretariat
March 2019