

**Confirmed Minutes of the 182nd Meeting of
the Advisory Council on the Environment
held on 14 November 2011 at 2:30 pm**

Present:

Prof Paul LAM, JP (Chairman)

Prof CHAU Kwai-cheong, JP (Deputy Chairman)

Ms Teresa AU

Ms Betty HO

Mr Michael JEBSEN, BBS

Mr Edwin LAU, MH

Ir Dr LO Wai-kwok, BBS, MH, JP

Dr MAN Chi-sum, JP

Miss Yolanda NG

Dr Alfred TAM

Mr TSANG Kam-lam, JP

Dr Carrie WILLIS, SBS, JP

Mr Simon WONG, JP

Ms Pansy YAU

Dr YAU Wing-kwong

Prof Ignatius YU

Mr Carlson K S CHAN, JP (Secretary)

Absent with Apologies:

Dr Dorothy CHAN, BBS

Mr Oscar CHOW

Prof FUNG Tung

Prof Joseph LEE

Prof LI Xiang-dong

Dr Ray YEP

In Attendance:

Ms Anissa WONG, JP

Mr Y K CHAN

Permanent Secretary for the Environment
Acting Assistant Director (Conservation),
Agriculture, Fisheries and Conservation
Department (AFCD)

3. Mr W C Mok briefed Members on the Administration's proposal to tighten the statutory emission standards for newly registered vehicles (except those light goods vehicles of design weight not more than 3.5 tonnes) to Euro V level starting from 1 June 2012 to further improve roadside air quality in Hong Kong. He supplemented that the major suppliers of light goods vehicles had just confirmed that they could arrange adequate supply of Euro V models by December 2012. As such, the Administration aimed to implement Euro V emission standards to cover this class of vehicles by 31 December 2012.

4. In response to the Chairman's enquiry on the proposal from the Right Hand Drive Motor Association (RHDA) for a six-month transitional period after introducing the mandatory emission standard, Mr W C Mok explained that Government would consider putting in place a special arrangement to allow a limited number of cars not meeting Euro V standard which had already been brought into Hong Kong before the mandatory scheme to continue to be sold in the territory. He clarified that the transitional arrangement requested by RHDA was not for stock clearance, but rather would like to have more time to adapt to the tighter emission control requirement.

5. In response to a Member's enquiry, Mr W C Mok said that motor vehicle fuels in Hong Kong were already at Euro V level. The use of Euro V fuel was a pre-requisite for Euro V vehicles to deliver its best environmental performance.

6. A Member pointed out that it was public knowledge that the heavy-duty trucks, light goods vehicles and buses, rather than private cars, were largely responsible for roadside air pollution in Hong Kong. He enquired on the tightening measures to be adopted in dealing with these classes of vehicles, in particular those commuting to and from the mainland which were not subject to the proposed policy. He urged that the measures must cover these types of commercial vehicles in order to ensure the effectiveness of the proposal in tackling roadside air pollution. Mr W C Mok responded that the current fuel standard in the Pearl River Delta Region was at Euro IV level for petrol, and efforts were being made to upgrade diesel fuel to the same level. In recent years, owners/drivers of cross-border vehicles preferred to get refilling in Hong Kong in consideration of better fuel quality as well as more competitive fuel prices as compared with the mainland. He acknowledged that emissions from commercial

vehicles were the major source of roadside air pollution. While efforts were made in the current proposal to reduce roadside emissions from commercial vehicles, the Administration would not lose sight of the problem and would take every possible steps to target the emission control measures on other types of vehicles as far as practicable..

7. In response to a further enquiry from a Member on whether there were available data on the share of air pollution attributable to vehicle emissions, particularly that was caused by commercial vehicles, Mr W C Mok said that the key air pollutants at roadside were respirable suspended particulates (RSP) and nitrogen dioxide (NO₂). He explained that NO₂ was not only a direct emission from vehicles but also formed as a result of the chemical reaction involving sunlight, ozone, volatile organic compounds (VOC) and nitrogen oxides (NO_x). At the roadside, the latter two were emitted mostly from vehicles while ozone was a regional air pollutant. It was therefore difficult to determine how much NO₂ was attributable towards vehicular emissions as there were other contributing factors leading to the formation of NO₂. As a general reference, vehicle emissions were a major cause of air pollution at the roadside; and in the general ambient air, the share of emissions by vehicles could be indicative. In that regard, about 30% of the NO_x emissions from local sources came from vehicles, with the rest from power plants, the marine sector and other combustion sources.

8. A Member supported the proposal for improving roadside air quality. Nevertheless, he opined that there were still a large number of vehicles only meeting the lower emission standards, and he considered it necessary for the Administration to expedite the replacement of the existing bus fleets to upgrade them to the new standard. He noted that since the introduction of the vehicle replacement incentive programme for Euro II diesel commercial vehicles in July 2010, only 401 non-franchised buses had been replaced by new models. He suggested that Transport Department should step up their efforts to boost the take-up rate. Mr W C Mok explained that the figure of 401 referred only to non-franchised buses. In fact, about 8% of the owners of Euro II commercial vehicles had already taken up the incentive for replacing their aged vehicles. Government had budgeted \$540 million for the three-year incentive programme of which some \$180 million (i.e. about one-third of the total funds reserved for the purpose) had already been given out in the first year.

9. A Member expressed his support on the proposal. He enquired on any plans from the Administration to discourage vehicle owners holding onto aged vehicles. He also considered that the disincentives would prove more effective if they were mandatory. He further suggested that the Administration might consider increasing the frequency of vehicle inspection from the current annual cycle to once every six months to better ensure that vehicles running on the road were properly maintained and compliant with the emission standards at all times. In reply, Mr W C Mok concurred with the need for disincentives and advised that the previous proposal to raise the licence fee for aged commercial vehicles had failed to secure the necessary support from the community and the Legislative Council. As for the suggestion of increasing the frequency of inspection for aged vehicles, he pointed out that while the Administration was open-minded, the support of the community and the Legislative Council was essential for its introduction.

10. A Member opined that NO₂ at roadside was the major source of pollution causing a chain of health problems in Hong Kong. He asked if data could be provided with regard to the actual reduction of NO₂ rather than NO_x that could be brought about by the tightening of emission standards of vehicles to Euro V level in order to bring about discernible air quality improvement at the roadside. Mr W C Mok said that no such data were available because the emission standards adopted in major vehicle manufacturing countries including the European Union (EU), Japan and the United States only governed the emission of NO_x but not NO₂. He pointed out that roadside NO₂ was formed both as a result of direct emissions from vehicles and reaction of NO_x with ozone and VOC under sunlight. The controlling authorities in those countries took the view that by reducing the overall NO_x emissions, NO₂ production at the tailpipe should also be reduced. The extent of reduction would depend on the types of emission control technology applied in the process. The Selective Catalytic Reduction (SCR) technology had been proven to be very effective in reducing NO and NO₂ emissions at the tailpipe. The Exhaust Gas Recirculation (EGR) technology was not as effective as SCR. Following a Member's further enquiry on whether the SCR technology would be mandated with the tightening of emission standards to Euro V level, Mr Mok said that in line with the practice in the EU, Japan and the United States, the manufacturers would be given the discretion to choose the type of technology for meeting the Euro V emission standards. He expected that the SCR would become a standard feature of vehicles with the introduction of the Euro VI

emission standard in future, when the requirement on the reduction of NOx would become even tighter.

11. A Member enquired on the comparison in emission performance of engines run by petrol, Liquefied Petroleum Gas (LPG) and diesel on the basis of the same engine capacity and the same emission standard. Mr W C Mok said that petrol and LPG vehicles shared similar performance in emission. Based on Euro V emission limits, a diesel light duty vehicle emitted about two times more NOx than a petrol or LPG vehicle because of the limitation of diesel emission control technology. In reality, the gap could be widened to five times more NOx emission because the catalytic converters of petrol or LPG vehicles were very effective in reducing emissions. In response to the Chairman's enquiry, Mr W C Mok said that a petrol or LPG vehicle used a three-way catalytic converter which was more effective in reducing emissions of NOx than the emission control technology currently deployed on a diesel vehicle. However, the converters would be worn out with use over time, and replacement must be made at regular intervals to ensure their effective operation.

12. A Member enquired if there were any corresponding plans to raise the level of requirements regarding the annual examination of vehicles, e.g. to include NOx emission test as one of the items when conducting the examination. Mr W C Mok replied that at present there was an advanced emission test in the annual vehicle examination in respect of diesel vehicles, and a pass was a prerequisite for licence renewal. As for petrol or LPG vehicles, there was check on carbon monoxide (CO) and hydrocarbons but not on NOx. In this regard, the Administration was working on a proposal to introduce an advanced emission check to include NOx test for petrol and LPG vehicles with the aid of dynamometers.

13. A Member supported the Administration's efforts in controlling vehicular emissions. He concurred with other Members' view that the Administration might consider imposing biannual inspection for vehicles. He also raised a suggestion to control the total number of vehicles registered in Hong Kong so that the overall roadside air pollution could be contained and better managed. Mr W C Mok responded that the Administration had to secure the support of the community and the Legislative Council for putting forward the suggestions. Transport Department and Transport and Housing Bureau had been

promoting the use of public transport that would correspondingly cut down the demand for private transport.

14. The Chairman summarized Members' views as follows –
- (a) the Council was supportive of the proposal to tighten on 1 June 2012 the vehicle emission standards to Euro V level for all newly registered vehicles except those light goods vehicles of design weight not more than 3.5 tonnes to further improve roadside air quality;
 - (b) having regard to the latest information from the major vehicle suppliers, the Council supported the Administration's suggestion to extend the tightening measures to cover light goods vehicles of design weight not more than 3.5 tonnes as from 31 December 2012;
 - (c) the Council considered that corresponding measures should be introduced, for example to include NOx emission test in annual vehicle examination; and
 - (d) complementing this proposal, the Council suggested that the Administration should step up efforts in promoting both incentives and disincentives to further its efforts in reducing emissions from different types of vehicles in Hong Kong.

Agenda Item 4: A New Producer Responsibility Scheme for Waste Electrical and Electronic Equipment
(ACE Paper 16/2011)

15. A Member declared interest that his company was a member of the Hong Kong Electronic Industries Association which had expressed its stance on the scheme. The meeting agreed that he could stay for the discussion.

16. Mr Samson Lai briefed Members on the development of the new Producer Responsibility Scheme (PRS) for Waste Electrical and Electronic Equipment (WEEE) on which the ACE was consulted in February 2010 during the public consultation. Members' views were invited on the proposed way forward.

17. A Member, while in support of the main proposals of the scheme, was concerned about the various operational details of the scheme. He raised the following points for clarifications –

- (a) the definition of “producer” under the scheme. There were arguments on whether it referred to the manufacturer and/or importer of the electrical/electronic appliance or the consumer who discarded the appliance and hence produced the waste;
- (b) whether the Administration would invest in the setting up of the WEEE treatment facilities; and
- (c) whether there was any business model for the subsequent WEEE Management Contractor (WMC) to support its viable operation.

He also took the opportunity to help reflect the concern of the retailers, especially those from small and medium enterprises (SMEs), on the mandatory take-back requirement. They were worried that the arrangement would entail additional logistic costs on their daily operation.

18. Mr Samson Lai replied that the purpose of PRS was to organize different stakeholders to share out the eco-responsibilities to minimize the environmental impacts of certain types of products and accordingly “producer” should be construed to mean the producer of waste rather than the manufacturer of product. In the context of the PRS on WEEE, the sharing of the eco-responsibilities among stakeholders would be reflected in the following way -

- (a) retailers to collect the recycling fee and to provide the take-back service;
- (b) the Administration to procure in the requisite WEEE treatment capacity by a “Design-Build-Operate (DBO)” contract;
- (c) importers/exporters to comply with enhanced import/export control; and
- (d) recyclers to comply with enhanced licensing control relating to the treatment and storage of WEEE.

The Administration would continue to explain the PRS concept to members of the public through publicity and public education. He also confirmed that the DBO project would be undertaken as part of the public works programme subject to the

approval of the Finance Committee of the Legislative Council. Planning the treatment plant was premised on the operational experience of the existing voluntary programmes, but the actual business model of the future plant would be proposed by individual private operators who would submit bids in the open tender. As for the issue on mandatory take-back, the Administration considered that it was part of eco-responsibilities to be shared by the retailers under the spirit of PRS and was an important initiative to better manage the movement of WEEE. The Administration had conducted a Business Impact Assessment (BIA) study to look into the potential compliance cost implications and had taken on board a BIA recommendation (to set up regional collection centres) to help mitigate the trades' concerns. The Administration would continue to engage the trades and the stakeholders to explore how the regulatory regime could be streamlined to facilitate compliance in a more cost-effective manner.

19. A Member agreed that the present strategy of exporting WEEE to developing countries, which accounted for over 80% of locally generated WEEE, was unsustainable and just shifted the WEEE issue to those jurisdictions which were more vulnerable in coping with the pollution problems. He opined that an accurate estimation of the volume of locally generated WEEE was crucial in formulating the strategy. He questioned whether the estimation of an annual 70,000 tonnage of WEEE generated in Hong Kong had adequately reflected the local situation. He pointed out that mobile phones, even if there was a vibrant second-hand market, were afforded a relatively short product cycle and would be turned into WEEE after a brief use. He therefore suggested that these mobile units should also be covered under the new PRS. He also opined that there were many attending issues to be settled relating to the take-back requirement, e.g. the scenario when a consumer had lost the sale order or the payment receipt. He further enquired about the minimum operating capacity for proposed WEEE plant to ensure its viability, and the source of prospective buyers for the recyclables from the plant as there may not be such demand in Hong Kong.

20. Mr Samson Lai replied that based on international experience, there should be an annual capacity of 30,000 tonnes to underpin the PRS, though over time the volume of WEEE to be handled could increase as the local recycling industry continued to develop with more practical experience and better technology. On the issue of mobile phones, trade-in schemes commonly available at the retail end facilitated the reuse of second-hand products. The

Administration would keep in view the development in case mobile phones would also emerge as a genuine waste problem in Hong Kong. Nevertheless, the present proposed coverage of the PRS would have already accounted for some 85% of the WEEE generated in Hong Kong, and should provide a good start for the scheme.

21. Another Member said that for other PRS schemes in over 30 countries and jurisdictions including Japan and the EU, the WEEE recycling fee was collected from the manufacturers, importers and retailers as they were all defined as the producers of WEEE. Regarding the take-back requirement, he opined that mandatory collection should not incur additional costs on the retailers as they could make use of the same truck for delivery and take-back for that single vehicle journey. He asked whether retail shops were required by law to take back old products delivered by the customers over the counter, the practical difference of the visible and invisible fees system, and whether the Administration would set up a central fund where the fees on WEEE so collected would be monitored by the trades and stakeholders so that the sharing of costs, the methods of recovery and treatment of WEEE would all be properly accounted for.

22. Mr Samson Lai said that the Administration would engage the trades on the operational details relating to the take-back requirement so as to ensure that the service would allow for effective collection of WEEE from the community on the one hand while not imposing unwarranted compliance burden on the retailers on the other. At this stage, the Administration had not drawn up any plan to require the designation of space at retail shops for WEEE delivered over-the-counter. They would discuss with the trades as to how best to put in place the take-back requirement taking into account the operation practices in Hong Kong. He pointed out that invisible fee and visible fee differed in the presentation of the recycling fee on the receipt, either approach would not affect the sharing of costs among different parties. During the public consultation there was no strong preference between the two systems. In general, under the visible fee system, the recycling fee would be reflected as a separate entry on the receipt. Consumers would know the exact amount required for the recycling the product in future and this would help avoid any dispute with the retailers. On the other hand, the visible fee could remind consumers of the environmental consequences arising from the consumption of electrical and electronic (E&E) products and therefore would discourage improper disposal. On the contrary, the fee would be

subsumed in the retail price under the invisible fee system. Based on the aforesaid analysis, the Administration was inclined to adopt the visible fee system. Lastly, there would not be a dedicated fund for the recycling fees collected. Any income generated from the WEEE treatment plant would be deposited into the General Revenue. This is because the use of the recycling fee, as part of public funds, was transparent and would be subject to close scrutiny of the Legislative Council. In any case, the Administration had no intention to raise revenues from the recycling fee and the Administration's overall investments into protecting our environment would far exceed the income to be generated from the fee.

23. A Member enquired if the Administration would consider a refund provision for tourists, similar to VAT refund in countries like the UK, EU and Japan, on the argument that they purchased E&E equipment in Hong Kong but the eventual product recycling would be in another country. Mr Samson Lai advised that the concern should mainly be on computer products as other product items under PRS were largely bulky household appliances. A refund scheme for tourists would be very expensive to operate, and the high administrative costs involved would have to be offset from the fees to be refunded. The Administration would work with the Tourism Board and other tourism-related organizations in planning publicity to tourists in this aspect.

24. Another Member was supportive of the main proposals of the PRS scheme. He noted that approximately 70,000 tonnes of WEEE were generated in Hong Kong annually but the centralized treatment facilities to be built could only absorb some 30,000 tonnes of WEEE. He enquired about the impact of the scheme on the various WEEE operations currently available on the market. There was a further question as how to charge the recycling fee for E&E goods purchased online which would not go through any retailer located in Hong Kong. He also noted that the Administration might recover the capital costs for the proposed Waste Management Contractor (WMC), and this practice would be quite different from as in the cases of other waste processing facilities built in Hong Kong including the landfills and Tsing Yi Chemical Waste Treatment Centre whereby the Administration would seek to recover only the operating costs. He enquired on the rationale for the difference in the charging mechanisms. He further opined that the number of regional centres proposed for WEEE collection should be increased in order to improve the collection channels as well as the movement of WEEE.

25. Mr Samson Lai replied that the proposed initial annual treatment capacity at 30,000 tonnes per annum was worked out on the basis of the experience in the EU, where there was a collection and treatment target of 4 kg of WEEE per capita per year. It should be noted that not all of the 70,000 tonnes of WEEE would end up as waste, as a certain portion would be refurbished for re-sale as second-hand goods. It was also expected that the private recyclers would take up part of the remainders. The buffer would allow the existing WEEE recyclers to continue and further develop their business. Online purchases were mostly confined to computer products and would be dealt with at the legislative stage. One possibility was to charge the user at the disposal end in future. The Administration had also engaged major brand agents at consultation stage to explore potential collaboration on the charging of the recycling fee for online purchases. With regard the suggestion to increase the number of collection centres, he advised that many existing recycling programmes were strongly supported by property management office which would help set aside collection corners for temporary storage of WEEE within the housing estates for collection in batches. The Administration would consider how to develop the future connection on the basis of existing strength, including the maintenance of such collection points to underpin the regional collection centres.

26. In response to the Member's follow-up question on the calls in the EU for raising the level of recycling to 85% of WEEE generated, Mr Samson Lai explained that it would be prudent for the treatment plant to initially start with 30,000 tonnes, given that at present about 90% of WEEE were exported out of Hong Kong. The handling capacity would be reviewed after the scheme had kick-started.

27. A Member asked how the WEEE treatment plant could sustain its operation given that the recycling fees collected would not be used to subsidize the recycling process. He quoted the experience of Japan that its government subsidized the setting up and running of the plant with part of the recycling fees so collected. He echoed another Member's view that more collection centres were required in order to reduce the logistics costs for retailers. In respect of the costs and subsidies, Mr Samson Lai said that an open tender would be conducted. The Administration would consider the costs involved as reflected in the tenders, and work out how to recover the costs including setting the levels of the recycling fees in line with the "polluter pays" principle.

28. A Member said that it was only fair to include the benefits obtained from the reduced demand for landfill capacity in the calculation of costs. He also considered that the Administration should take a leading role in the scheme and take it as a golden opportunity to set up a viable green industry in Hong Kong.

29. Another Member was supportive of the scheme as it was important to retain the recycled materials in Hong Kong. As regards the mandatory take-back requirement, she considered that there would be teething problems with putting the responsibility on the retailers. For examples, the shops might close down or the consumers had lost the receipt so that they had no chance to take back the used equipment to the retailers. She suggested that the public should be allowed to return their WEEE to collection centres without the need to produce the receipt or any evidence and get refunded as an incentive. Mr Samson Lai replied that retailers should devise their own take-back arrangements under which consumers could claim their service in accordance with certain terms and conditions. As regard the suggestion of providing refund at the collection centre, it was market-driven and had been the standing practice on the local markets which would continue in future.

30. A Member was supportive of the proposal. On the take-back requirement, she noted that the retailers acted as agents to arrange delivery from the distributors to the consumers. She enquired whether the responsibility of the take-back should also be put on the distributors as well. For the public who just wanted to discard the used products rather than buying new ones as replacement, she considered it important to consider how to charge these households for the recycling fee. The challenge on take-back under this situation was whether the consumers would take the trouble to return the used equipment to the retailers. This observation was considered particularly relevant in respect of collection of computer products. Mr Samson Lai replied that the objective of PRS was to put in place a single statutory framework to cover the five types of WEEE. The Administration would further engage the trades to work out the operational details to ensure that the take-back service requirement could facilitate effective collection of WEEE on one hand while not imposing unwarranted compliance burden on the retailers on the other.

31. Another Member expressed his support of the scheme. He commented that the value of the recyclable materials should be reflected in the

proposal, that there should be collection centres to service households in old towns and single block buildings, and that the Administration should expedite the implementation of the scheme which had been placed on the public agenda for quite some time. Mr Samson Lai replied that the Administration would not be involved in the selling of recycled materials recovered from the plant. It would be left to the WMC operator to deal with the recyclables, the value of which should be reflected in the tender contract price. He pointed out that the proposed four regional collection centres should run more like a hub. There were existing collection points of smaller scale all around the territory to collect WEEE from households and they could continue to operate to underpin the regional collection centres.

32. A Member was supportive of the main proposals and echoed Members' views that more local collection points should be set up to facilitate collection of WEEE from households and that the WEEE treatment facility should be run at full capacity. He considered that the Administration should invest more resources in the treatment process, and that a central fund should be set up to help retailers cut down the compliance cost vis-à-vis the take-back requirement.

33. Another Member was concerned that without stipulating the percentage of responsibility to be shouldered by the product manufacturers/producers, the entire recycling fee would have to be borne by the consumers. He suggested for the Administration to set out the percentage of responsibilities to be borne by different parties. He also supported other Members in the suggestion on setting up more collection points, for example, in all the 18 districts with the assistance of the respective District Councils.

34. A Member pointed out that the discussion paper quoted an example of leaching out the lead from the leaded glass in cathode ray tubes (CRTs) before exporting the product for recycling. He said that leaded glass could be re-used directly by another CRT manufacturer in countries like India, who might require leaded glass instead of unleaded glass for his business. He suggested that the appropriateness of citing this example should be reviewed.

35. Mr Samson Lai thanked Members for their views. He said that the Administration had acted proactively and decided to invest in the collection and treatment facilities which were the prerequisites of the scheme. The decision to

pursue the DBO approach in building the treatment facility also reflected the Administration's determination to move as quickly as possible in tackling the WEEE issue.

36. The Chairman summarized Members' views as follows –

- (a) the Council was supportive of the main proposals under the new PRS;
- (b) the Council suggested that the Administration should set up more collection points to better manage the collection and movement of WEEE and mitigate the retailers' compliance costs in providing the take-back service;
- (c) the Council suggested that the Administration should procure adequate processing capacity of the WEEE treatment plant for the proper treatment of locally generated WEEE;
- (d) the Council suggested that the Administration should further consult the trades on the WEEE collection arrangements to help reduce their logistics costs in providing the take-back service; and
- (e) the Council considered that the Administration should continue to thrash out the operational issues relating to the mandatory take-back arrangements.

Agenda Item 5: Any other business

37. While noting that the new Government Offices at Tamar were now operational, Members opted to continue holding meetings of the ACE in the conference room in Revenue Tower.

38. The Chairman said that he would be discussing with the Administration on the holding of a retreat for ACE as agreed at the last meeting. The retreat should be a half-day session. The format of the retreat and topics to be covered would be decided later. Members would be advised on the details in due course.

Tentative items for discussion at the next meeting

39. The agenda was being compiled. Members would be informed in due course.

Agenda Item 6 : Date of next meeting

40. The Chairman called the meeting to a close. He informed Members that the meeting originally scheduled for 12 December 2011 was cancelled. A special meeting had been lined up on 30 December 2011 to discuss, inter alia, the EIA report on the Integrated Waste Management Facilities Phase 1.

ACE secretariat
November 2011