

**Confirmed Minutes of the 143<sup>rd</sup> Meeting of  
the Advisory Council on the Environment  
held on 11 June 2007 at 2:30 pm**

**Present:**

Prof LAM Kin-che, SBS, JP (Chairman)  
Prof WONG Yuk-shan, BBS, JP (Deputy Chairman)  
Dr Dorothy CHAN, BBS  
Mr James GRAHAM  
Prof Paul LAM  
Mr Edwin LAU  
Ms Goretti LAU  
Dr MAN Chi-sum, JP  
Dr NG Cho-nam, BBS  
Mr Markus SHAW  
Mr TSANG Kam-lam  
Mr Eddie WONG  
Dr YAU Wing-kwong  
Mr Carlson K S CHAN (Secretary)

**Absent with Apologies:**

Ms Betty HO  
Prof Howard HUANG  
Prof POON Chi-sun  
Mr Simon WONG  
Prof WONG Tze-wai

**In Attendance:**

Ms Anissa WONG, JP	Permanent Secretary for the Environment, Transport and Works (Environment)
Mr CHAN Jee-keung	Acting Assistant Director (Conservation), Agriculture, Fisheries and Conservation Department
Mr P Y TAM	Assistant Director/Technical Services, Planning Department
Ms Monica KO	Principal Information Officer, Environmental Protection Department (EPD)
Ms Josephine CHEUNG	Chief Executive Officer (CBD), EPD
Miss Sarah NG	Executive Officer (CBD), EPD

**In Attendance for Agenda Item 3 :**

Mr Raymond FAN	Deputy Director of Environmental Protection (2), EPD
Mr Alfred LEE	Assistant Director (Waste Management Policy), EPD

Mr TE Chi-wang

Senior Administrative Officer (Waste Management Policy), EPD

**In Attendance for Agenda Item 4 :**

Mr YEUNG Kai-hing

Assistant Director (Development, Research and Administration), Hong Kong Observatory

Mr Michael CHEUNG

Chief Engineer/Energy Efficiency A, Electrical and Mechanical Services Department

Dr Shermann FONG

Senior Environmental Protection Officer (Cross-Boundary & International)<sup>3</sup>, EPD

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**Agenda Item 1 : Confirmation of the Draft Minutes of the 142<sup>nd</sup> Meeting held on 14 May 2007**

The draft minutes were confirmed without amendments.

**Agenda Item 2 : Matters Arising from the Minutes of the 142<sup>nd</sup> Meeting held on 14 May 2007**

2. There were no matters arising from the minutes of the last meeting.

**Agenda Item 3 : A proposal on an environmental levy on plastic shopping bags**  
***(ACE Paper 12/2007)***

3. Mr Alfred Lee briefed Members on the proposal for introducing a producer responsibility scheme (PRS) on plastic shopping bags, which involved an environmental levy. He highlighted that the objective of the proposal was to discourage the indiscriminate use of plastic shopping bags through a direct economic disincentive.

4. Mr Raymond Fan said that the problem of indiscriminate use of plastic shopping bags was a key issue raised by the Council for Sustainable Development and the PRS on plastic shopping bags was a key initiative under the “First Sustainable Strategy for Hong Kong” and “A Policy Framework for the Management of Municipal Solid Waste in Hong Kong” promulgated in 2005. He also highlighted the following –

- (a) The proposal was in line with the “polluter-pays” principle and would have a high educational value in raising public awareness and promoting behavioural changes.
- (b) While voluntary effort had achieved good results in plastic shopping bag reduction, the proposed scheme was necessary to achieve a more significant reduction to tackle the imminent and serious waste disposal problem.
- (c) A phased approach by first covering chain or large supermarkets, convenience stores and personal health and beauty stores (“relevant retailers”) would ensure successful introduction of the levy and effective administration of the scheme.
- (d) As the degradability of “degradable” bags could be undermined in local landfill disposal conditions and mixing of “degradable” bags with conventional plastic bags might render recycling more difficult and costly, the best solution was to reduce the use of plastic shopping bags at source.
- (e) With a view to encouraging the public to make multiple and best use of their shopping bags, plastic shopping bags sold for more than \$5 each would be exempted from the proposed scheme.
- (f) The scheme had taken into account the experience of overseas countries, such as Ireland and Taiwan.
- (g) The Administration would review the effectiveness of the scheme after a year of implementation, and consider how best to extend the scheme to other retailers. Efforts were being made to introduce the Product Eco-responsibility (PER) Bill with the PRS on plastic shopping bags as one package for submission to the Legislative Council (LegCo) before end 2007 with a view to implementing the scheme by end 2008 to early 2009.

5. The Chairman informed Members that the Waste Management Subcommittee (WMSC) had discussed the proposal on 6 June 2007. Upon the request of the Chairman of the WMSC, he had requested the Secretariat to circulate the notes of the WMSC meeting to all Members before the meeting.

6. A Member strongly supported the proposal. He considered that as the scheme was the first mandatory PRS to be introduced in Hong Kong, it would be important to pay attention to technical details to ensure successful implementation. He asked whether the levy of 50 cents per bag was high enough to deter the indiscriminate use of plastic shopping bags. Mr Raymond Fan said that there were different views on the appropriate level of the levy. The result of the “No Plastic Bag Day” campaign indicated that the charge of 50 cents would create a sufficient incentive and was acceptable by the public. They would take into account comments during the public consultation period and conduct a review after implementation.

7. A Member asked whether the PER Bill would allow the Administration to adjust the level of levy by administrative means. Mr Raymond Fan explained that the main bill would cover the main features of PRSs as a whole while the implementation details of individual PRS would be set out in the subsidiary legislations. The revision of the level of levy would, in any case, involve legislative amendments and thus had to go through the legislative process.

8. A Member asked whether it would be possible for the legislation to empower the Administration to adjust the level of levy within a prescribed cap, say \$1. Ms Anissa Wong said that it would depend very much on how the LegCo considered the proposed arrangement. From the Administration’s perspective, the discretion would allow more flexibility and higher efficiency in responding to the impacts of the levy. However, it was anticipated that it would be difficult to seek the agreement of the LegCo for such an arrangement.

9. A Member was concerned that some of the relevant retailers might switch to paper shopping bags which were also not environmentally friendly. He considered that public education was very important in raising public awareness and changing behaviour. Another Member agreed that it would be important to guard against the switch to paper shopping bags, bigger plastic shopping bags and the abuse of environmentally friendly bags by making reference to the experience of the United States and Canada. Mr Raymond Fan said that paper bags were generally less durable and were about six times heavier and 15 to 18 times bulkier than plastic bags. They would also increase the burden on landfills. The Administration was mindful to guard against the possible switch to bulkier carriers.

10. The Chairman asked whether it would be useful to state at this stage that a levy would be imposed on paper shopping bags in the future. Mr Raymond Fan said that it would be unlikely for supermarkets and convenience stores to switch to paper shopping bags in view of the less durable nature of paper shopping bags for heavy and wet products. Moreover, the bulky nature of paper bags would increase the logistical and administration costs of retailers. It was anticipated that only retail outlets selling higher value products which were light in weight might switch from plastic to paper shopping bags. These retailers were not covered in the current proposal. The problem of excessive packaging would be tackled by a separate PRS in the future.

11. A Member enquired about the exemption of reusable shopping bags, including environmentally friendly bags made of plastics, sold for \$5 or more. Mr Raymond Fan explained that the exemption aimed at encouraging people to make the best use of reusable shopping bags as these bags already carried a price and would be reused productively. They had made reference to the current price of these kinds of bags in setting the benchmark of \$5.

12. A Member said that while she could see the goodwill of the proposal, she considered that it would be unfair to impose the levy on only some of the retailers in a free market economy. From the business point of view, she shared the views expressed by another Member at the WMSC meeting that it was important to maintain a level-playing field. She suggested the Administration to explore whether the problem could be controlled at source such as by imposing restrictions of plastic shopping bags at the manufacturing or supply level rather than requiring customers to bear the cost.

13. A Member said that the current proposal covered only a few major retailers which contributed to about 20% of the problem and there was no mentioning of subsequent phases. The Administration should state clearly the plan to extend the scheme to all the retailers in a holistic manner. Mr Raymond Fan explained that the proposed scheme was the first phase of the first mandatory PRS and it was important to ensure that it would be feasible for successful implementation. The first phase would therefore cover sectors where the abuse of plastic shopping bags was prominent and traceable. A review would be conducted in a year's time with a view to extending the scheme to other sectors.

14. In reply to the Chairman's enquiry about the means to make the public understand that the proposal was only the first stage of the PRSs, Mr

Raymond Fan said that there would be a series of education and publicity programmes on the introduction of the scheme and emphasis would be placed on this area in the context of the seriousness of the problem of municipal solid waste.

15. A Member said that he had no problem for the proposal to cover major supermarkets and retailers at the first phase to ensure effective administration of the scheme. It was common around the world that regulations or schemes were applied to the larger businesses at the initial stage to ensure successful implementation. He considered that the acceptable level of the levy would work out in a free market economy.

16. A Member quoted the example of charging scheme on construction and demolition waste which was the first phase of charging schemes on various types of waste. Similarly, the current proposal was only the first phase and the scheme would be extended to cover other retail outlets. He considered that the consumers should shoulder the responsibility for the indiscriminate use of plastic shopping bags. With the changing life style for convenience and fast pace, the retailers had to satisfy the needs of consumers. The environmental levy could serve as a reminder to the public for them to shop in a more environmentally friendly way.

17. A Member said that from an economist point of view, the scheme should be implemented at the consumer level to achieve effective results. When the scheme was implemented to a certain sector, it would be fair for players within the same sector as competition was among retailers within the same sector rather than with retailers in other sectors. One would not expect a level-playing field between big supermarket chains and small neighborhood stores. He considered that the scheme was a good proposal and the Administration had made it as fair as practicable.

18. A Member shared the Member's views. He considered that there was a level-playing field for the retailers within the same sector as the levy would be applied to all retailers in the selected sectors. It was important for the Administration to ensure that the scheme would not lead to unfair competition among the retailers within the same sector. The retailers might be delighted for reducing operating costs in providing plastic shopping bags.

19. A Member strongly supported the proposal and the phased approach. He said that the Australian Government had decided to implement a

levy on plastic shopping bags in 2009 as the voluntary programme could only achieve about 10% reduction in the past three years despite strenuous efforts made. The environmental levy on plastic shopping bags in Taiwan was also introduced by phases. Exemption was applied to the restaurant trade in view of difficulties in implementation. In Hong Kong, nearly 2 billion plastic bags were distributed through supermarkets and convenience stores every year. The supply of plastic bags added considerable cost to the retail industry. The introduction of the environmental levy might be beneficial to retailers by reducing their operating costs and selling more reusable shopping bags.

20. A Member said that she personally agreed with the proposed levy but considered it not fair for certain sectors to be pinpointed. The waste problem arising from plastic bags was so serious that the levy should be applied to all retail outlets.

21. A Member said that while respecting the principle of maintaining a level-playing field, it was important that the system should be simple, workable and able to generate results in order to secure commitment from the general public with a view to extending the scheme to other retailers. To enable better understanding of the issue, it was necessary for the Administration to explain to the public why it was not feasible to impose the levy on all retailers at one go and why restrictions were not imposed on manufacturers or suppliers. The Chairman shared Prof Paul Lam's views. He considered that it would be useful for the Administration to explain whether there were alternatives to achieve the same anticipated results and why a phased approach was necessary.

22. Mr Raymond Fan explained that there were some 55,000 retail outlets in Hong Kong. It would not be feasible from the outset to impose a blanket requirement of plastic shopping bag levy on all retail outlets. As more than 20% of the plastic shopping bags in the landfills were originated from about 4% of the retail outlets, it would be more effective to impose the levy on these retail outlets in the first phase. He highlighted that the proposal aimed at eradicating the abuse but not the usage of plastic shopping bags. The first phase focused on sectors where the abuse was most serious and obvious. It was estimated that plastic shopping bags distributed from the retailers concerned would be reduced by close to 1 billion from the current figure of more than 1.8 billion. A significant reduction would be anticipated.

23. Ms Anissa Wong said that the Administration had detailed internal

deliberations on the approach in introducing the environmental levy. While it was an ideal arrangement for all sectors to be covered at one go, there were many practical constraints. The landfill survey identified specific sectors which warranted immediate action. It was important to build up confidence in the enforcement system at the outset. While the scheme would be extended to other retail outlets in the future, there were bound to be practical difficulties to impose the levy on some small retail outlets. The experience in Taiwan showed that the scheme could not be over ambitious. Through the objective identification of relevant sectors and subject to a very careful and transparent legislative process, there was no question about creating an unfair market situation. The Administration would make it clear that this was the first phase of the scheme and a voluntary scheme in other sectors would go on in parallel to give the necessary assurance that this was not the end of the scheme.

24. A Member considered that the basic and key element of the initiative was environmental education. It aimed at engineering a cultural and behavioural change in respect of the indiscriminate use of plastic shopping bags and did not mean to penalize any sector.

25. The Chairman agreed that the crux of the matter was the change of behaviour and habits. The scheme should be simple and feasible for implementation. It was important to send a message that the scheme did not aim to eradicate the usage of plastic bags, victimize certain sectors and this was only the first step.

26. In reply to a Member's enquiry about the collection of levy, Mr Raymond Fan explained that the retailers would collect the levy and transfer the sum to the Government general revenue on a quarterly basis. Based on the estimated reduction of plastic shopping bags, the environmental levy could generate revenue of up to about \$200 million a year. Regardless of the amount collected, the Administration had pledged to step up efforts in promoting environmental education in the aspect of waste management, including funding resources from the Environment and Conservation Fund (ECF).

27. A Member said that this was the first of the many PRSs and anticipated that the revenue generated would be quite substantial. He suggested that a designated fund be set up by the revenue generated for conservation purposes.



28. The Chairman asked whether it would be easier for the public or the legislature to accept the proposal if the levy collected would be put into a designated conservation or environmental protection fund. Mr Raymond Fan said that while some had suggested the setting up of a designated fund, others considered that it would be more important for the Government to implement environmental protection and conservation initiatives regardless of the sources of funding. The revenue generated might be less than anticipated if the public was conscious in minimizing the use of plastic shopping bags. A Member considered that it was important to make it clear that the scheme was not a revenue-generating proposal. The public was in support of the scheme itself but not because it would generate revenue.

29. A Member said that even if the number of plastic shopping bags distributed by the retailers was reduced to 0.8 billion per year, the revenue generated would still be very substantial. Given that the revenue was generated from the environmental levy and it was very difficult to secure public funding for nature conservation initiatives, he suggested that the Council should ask the Administration to set up a designated fund. Another Member supported the suggestion.

30. A Member considered that the objective of the proposal was not the collection of levy but cultivation of a responsible culture on the use of plastic shopping bags. The introduction of a levy was only a means to an end. The allocation of Government budget was outside the Council's ambit. The funding requirement for environmental improvement projects such as Harbour Area Treatment Scheme was huge and could not be covered by the revenue generated by the levy. With the anticipated reduction in the use of plastic shopping bags, the levy collected would be significantly reduced. It would be more appropriate to follow the existing procedures in bidding funding resources. Moreover, the linking of environmental levy with the funding requirement for environmental improvement projects might set an undesirable precedent.

31. A Member said that while the idea of setting up a designated fund was attractive, he preferred not to link the levy with conservation initiatives directly. The public might have a wrong impression that they were paying the levy in support of conservation efforts. Nevertheless, the Council might exert pressure for allocating more public financial resources for environmental protection and nature conservation purposes.

32. Ms Anissa Wong said that there were pros and cons for directly linking the revenue generated from the levy and public expenditures on environment protection initiatives. The revenue generated might be much less than anticipated when the public gradually changed their habits. There would be a number of major environmental protection initiatives and infrastructure projects which would require public financial resources. Most importantly, the objective of introducing the levy was not revenue generating but to promote behavioural change. There would be merit for delinking the two. She emphasized that regardless of the amount of revenue collected from the levy, the Administration was committed to seeking funds for worthwhile environmental protection initiatives and infrastructure projects. Moreover, additional funding would be injected to the ECF as appropriate. The Chairman said that there were a number of environmental protection and conservation projects and initiatives worthwhile for implementation but could not be proceeded due to the lack of financial resources. He hoped that the Administration could take note of this.

33. The Chairman summarized Members' views and suggestions as follows –

- (a) the Council supported the Administration's proposed scheme, which would go a long way not only in terms of reducing waste, but also in terms of educating the public on their “eco-responsibility”. The proposed environmental levy represented another major step forward in putting the “polluter-pays” principle into practice;
- (b) the scheme should be implemented as soon as possible with a view to reducing the indiscriminate use of plastic shopping bags through a direct economic disincentive;
- (c) the Council accepted that the scheme, being the first phase in the introduction of PRSs in Hong Kong, should be simple and easy to administer such that it could get off the ground smoothly;
- (d) the Council encouraged the Administration to review the scheme in a year's time. Consideration then should be given to extending the scheme to other retail outlets so as to realize more environmental benefits and foster a level-playing field in the affected business sector;

- (e) the Administration should continue with the voluntary effort on plastic shopping bag reduction, especially at retailers not yet covered by the scheme;
- (f) the Council urged the Administration and LegCo to work together to bring in this statutory PRS as soon as practicable; and
- (g) while the majority of the Members accepted that it was not advisable to set aside the revenue generated from the scheme for environmental protection and conservation purposes, the Council urged the Administration to step up its efforts in securing additional resources for pursuing environmental protection and conservation initiatives.

**Agenda Item 4 : Greenhouse gas emissions and their effects on global warming**

***(ACE Paper 13/2007)***

34. Dr Shermann Fong briefed Members on the latest trend of greenhouse gas (GHG) emissions, their effects on global warming and the measures being taken to reduce GHG emissions in Hong Kong, including programmes to promote energy conservation and the development of renewable energy. He highlighted that a study would be commissioned and supervised by an inter-departmental coordination group to assess the impact of climate change on Hong Kong taking into account recent international studies and explore all feasible means to enhance the existing policies and measures to mitigate and adapt to the effects of climate change.

35. A Member said that global warming had profound impacts on the natural and human systems. He considered that the conclusions of the Intergovernmental Panel on Climate Change in its recent assessment report on climate change were very conservative as it was necessary for the scientists and politicians to reach a consensus. The scientists would consider that the outlook was a lot more worrying. Based on the information obtained from the World Wide Fund annual conference held in Beijing recently, GHG emissions at current rate would lead to a 90% plus chance of a temperature rise of 4 °C by the end of this century which would mean that 70% of the animal species would likely become extinct. There should be a sense of urgency about the issue. While Hong Kong was not a major emitter of GHG, Hong Kong should take more

proactive measures in playing its part in tackling the problem. As the energy industries accounted for about 62% of the total GHG emissions in Hong Kong, actions should focus on reducing emissions from this sector. The key direction of energy saving in the world was on energy efficiency rather than energy production. As about 30% of the local electricity consumption was on air-conditioning, much more effort should be made in reducing electricity consumption in this area. For example, the use of solar energy at rooftops should be encouraged. Moreover, the target of 1 to 2 % of Hong Kong's total electricity supply to be met by renewable energy (RE) by 2012 was too low. A task force should be set up to formulate and implement measures on climate change.

36. The Chairman shared the Member's concern about the urgency and seriousness of the problem of climate change. He said that while the volume of GHG emissions in Hong Kong accounted for about 0.2% of the global GHG emissions, the local population accounted for only about 0.1% of the world population which meant that the emissions per capita was high in relative terms. A Member added that there were not many industrial activities in Hong Kong contributing to GHG emissions. Another Member agreed that as Hong Kong was not a manufacturing base, the contribution of 0.2% of the global GHG emissions was not a low figure and Hong Kong should not be complacent.

37. A Member agreed that the problem of climate change should receive urgent attention but he observed that the issue seemed not at the top of the agenda of the local environmental sector. He considered that the scope of the proposed study seemed to focus on adaptation and mitigation measures rather than measures to reduce GHG emissions. He asked whether a target would be set on local GHG emissions and whether Hong Kong would participate in Kyoto Protocol's post-2012 targets. He considered that Hong Kong could take a proactive role in the international context. Dr Shermann Fong explained that the terms "adaptation measures" and "mitigation measures" were used by the United Nation which referred respectively to measures to adapt to climate change and ways to reduce the production of GHG emissions. While the proposed study would take some time to complete, various measures would continue to be taken to reduce GHG emissions. Mr David Wong said that the Mainland, as a developing country, was not required to commit to any GHG emission target under the Kyoto Protocol and the same arrangement was applied to Hong Kong as part of the Mainland. Notwithstanding, the Government had been making strenuous efforts and actively pursuing a string of measures since the 1990s with a view to reducing GHG emissions in support of the international efforts. Continued efforts would

be made to pursue all practicable measures to reduce GHG emissions.

38. A Member said that he did not see much commitment from the Government in pushing ahead measures in reducing GHG emissions in the private sector and the community as a whole, such as electricity consumption in air-conditioning systems. He urged the Government to provide some incentives to promote the use of water-cooled and ice-storage air-conditioning systems in the private sector as they were proven ways to reduce electricity consumption. Moreover, he considered that the overall thermal transfer value (OTTV) under the Buildings (Energy Efficiency) Regulations was too conservative and should be reviewed to increase the insulation capability of buildings for reducing electricity consumption. The target of 1 to 2 % of Hong Kong's total electricity supply to be met by RE by 2012 was too low. More commitment from the Administration and a timetable would be required to drive the initiatives of energy efficiency at a much faster pace both in the public and private sectors.

39. Mr Michael Cheung said that the water-cooled air-conditioning system was more energy efficient and could achieve about 20% savings when compared with the air-cooled air-conditioning system. Thus, they had been actively promoting the switching from air-cooled to water-cooled air-conditioning systems in both public and private projects. Up to present, they had received nearly 300 applications for the switching. About 87 projects had been completed which amounted to about 76 million kWh savings per year. They would continue to promote the use of water-cooled system to achieve higher energy efficiency. The ice-storage system was adopted by some overseas countries by generating some ice at night time to offset the peak cooling load of the air-conditioning plant in day time. However, it should be noted that the amount of energy used to generate ice was similar to that consumed during the cooling process. There were also other considerations, such as space required for ice storage tanks and energy loss in the conversion systems, needed to be taken into account. Regarding the OTTV, a more stringent requirement was adopted in recent years and reviews would continue to be conducted. The Building Energy Codes (BEC) issued by the Electrical and Mechanical Services Department (EMSD) covered requirements in air-conditioning installations, among others, for new buildings and retrofitting projects. Government projects were required to comply with the BEC and voluntary compliance by private projects was vigorously promoted to achieve energy efficiency. A Member considered that mandatory rather than voluntary compliance should be pursued in view of the urgency of the problem of global warming. Another Member said that while the

water-cooled air conditioning systems could achieve energy saving, it was necessary to take note of the Legionnaires' Disease associated with the cooling tower.

40. In reply to a Member's enquiry about the implementation of the water-cooled air-conditioning systems, Mr Michael Cheung said that while the scheme was still called a pilot scheme at this stage, they hoped that it would be turned into a standing scheme soon. However, some areas such as Central and Quarry Bay might have limitations in providing sufficient fresh water for cooling purpose. The current scheme already covered most part of the territory involving 80 designated areas and covering 78 million m<sup>2</sup> gross floor area.

41. A Member considered that the current mechanisms under the Planning and Buildings legislations incentivized people in the construction and real estate development industries to maximize the use of floor space which would lead to the problem of over-sized cooling systems in buildings. There were no restrictions on the size of cooling systems or water-cooling requirements. Unless suitable amendments were made to relevant provisions under the Planning and Building legislations, it would be difficult to achieve meaningful results in reducing power consumption in buildings.

42. A Member said that the Government currently recommended the use of specific refrigerants which had requirements on zero ozone depletion potential but not global warming potential. He considered that the proposed study should cover the use of refrigerants which were not environmentally friendly and explore alternative ways in cooling a building. Cooling a building by the use of air-conditioning systems should be used as a last resort. A long-term direction on the technical improvements of cooling systems in buildings would be an important factor in achieving energy saving on a large-scale basis in the future.

43. A Member agreed that proactive measures should be taken in view of the urgency and seriousness of the problem. She considered that town planning was an important aspect which could help improve the problem of global warming. She suggested that a public forum be organized to promote public awareness and tap the views of the interested parties on the way forward. Another Member agreed that there was a high demand for information sharing on the subject of climate change. Mr David Wong said that the suggestion would be taken into account in considering the public engagement process.

44. Mr Carlson Chan said that Members seemed to have an impression that the Government was not according a high priority to the issue of climate change. He assured Members that the issue was one of the top priorities on the Administration's agenda. The Environmental Protection Department (EPD) had been making proactive efforts and actively coordinating relevant departments to speed up measures in different areas to reduce GHG emissions, enhance energy efficiency and conservation, encourage the use of RE and promote public awareness.

45. A Member said that as the energy portfolio would be placed under the purview of the Environment Bureau after the reorganization on 1 July 2007, he hoped that more concrete plans would be drawn up in controlling GHG emissions from the energy industries. He also hoped that the new bureau could coordinate efforts of all Government departments by coming up with a timetable in tackling the problem. He said that a fund was set up a few years ago to subsidize industries and institutions to install energy saving facilities. In view of the positive response, he hoped that the fund could be set up again to encourage applications from members of the public to install energy saving facilities at home. He considered that environmental education on the impacts of climate change was important as many people in Hong Kong considered that the issue was rather remote.

46. A Member agreed that it was important to enhance public awareness of the responsibility in reducing energy consumption. He informed Members that the Tai Po Environmental Association, with funding support from the Environmental Campaign Committee, was organizing a "One Tonne Challenge" programme which targeted at some uniform groups with about 200,000 members in reducing one tonne of carbon dioxide (CO<sub>2</sub>) emissions per family. Mr David Wong fully agreed the importance of public education and participation. He assured Members that efforts would be further strengthened in these aspects.

47. Mr Yeung Kai-hing said that the Hong Kong Observatory, in consultation with the Education and Manpower Bureau, was preparing an education package on climate change to educate the students about the subject and appeal to their support in energy saving.

48. In reply to a Member's enquiry about the level of CO<sub>2</sub> emissions from human activities as compared with that generated by natural exchange, Mr David Wong said that the data contained in the paper referred to human-induced

CO<sub>2</sub> emissions. The Member said that some information showed that 8 to 10 billion tonnes of CO<sub>2</sub> were generated by natural exchange per year and about 10% was being added to the atmosphere due to human activities. He considered that it would be useful for the proposed study to assess the proportion of CO<sub>2</sub> emissions from human activities as compared with that generated by natural exchange in Hong Kong and to assess the carbon intensity on a land area basis.

49. A Member considered that a number of issues should be covered by the proposed study. First, he agreed with another Member that town planning and urban design were very important in reducing the consumption of fossil fuels and thus GHG emissions. He considered that urban renewal development would be one of the means to reduce GHG emissions and increase energy efficiency in old congested areas. Second, a more comprehensive and proactive energy policy, including fuel mix, would be necessary. It would be crucial to plan the adaptation and mitigation measures based on the long-term energy policy and fuel mix. This seemed to be an area being neglected. Third, a market-oriented approach should be adopted for demand-side management in achieving energy efficiency and conservation, such as carbon tax which would be an effective measure. The current approach of putting the focus on power companies for achieving energy efficiency and conservation was a misplaced approach. Finally, efforts on greening in urban area and preservation of woodland in the countryside should be further strengthened. The tree planting exercises in recent years were mainly to compensate the loss of trees due to hill fire. More concerted efforts should be made to prevent hill fire.

50. On Members' comments about the importance of town planning and urban design in reducing GHG emissions, Mr P Y Tam highlighted that although Hong Kong was a very small and congested city, the Government had made good use of its land resources. Since as much green areas as possible had been reserved as country parks, development was mainly clustered in the Metro areas and new towns. This had the benefit of efficient use of energy by putting interacting activities close together and at the same time commuting was catered for by rail-based public transport systems. The Administration was also committed to exploring ways to improve the environment and air quality. The Planning Department had carried out a general air ventilation assessment study and now Government departments would carry out air ventilation assessment studies for major Government projects whilst the private sector was also encouraged to do the same. From experience, it was revealed that large podium developments should be avoided as they would trap emissions at street level in



crowded urban areas. Moreover, improvement in transportation and traffic management in congested areas could also help reduce vehicular emissions. A Member considered that as the planning system in the past few decades was based on a developing economy, a fresh angle would be necessary as Hong Kong was now a developed economy.

51. A Member considered that it would be necessary to consider more innovative measures in reducing GHG emissions. On the supply side of electricity, considerations should be made to accelerate the phasing out of coal-fired plants and building of nuclear power plants which were the long-term directions of many overseas countries. On the promotion of RE, the current obstacle for the private sector to develop RE projects was that it could not be connected to the grid. Actions should be taken in this aspect. On the demand-side management, the responsibility should not rest with the power companies. The Government should take the initiative to implement some incentive schemes or even mandatory requirements to achieve energy saving. For example, the Australian Government would implement mandatory replacement of incandescent light bulbs with the more energy-efficient compact fluorescent lamps in 2009.

52. Mr Michael Cheung explained that as the local power plants still had sufficient capacities to meet the demand, the current financial plans of the two power companies did not contain any proposal for the development of new generation unit or power plant. The power generated from the Daya Bay Nuclear Power Station was being fully utilized. Building of new nuclear power plants would raise complicated and difficult issues that needed to be carefully addressed. On the promotion of RE, the Government encouraged the private sector to install RE technologies. For example, the photovoltaic panels installed in private premises could be connected to the grid. They had issued guidelines for such installations to ensure that the installations would not cause disruptions to other users in the grid.

53. A Member said that there were many opportunities for putting in place green measures and RE installations, such as the installation of solar panels in sky gardens at rooftops. A good example was a building in Peking Road at which the top part of the curved structure was covered by solar panels. In order to incentivize the developers to install such green measures, increased floor space should be provided. It was necessary to change the mindset in thinking about ways to encourage the use of RE.

54. A Member said that one of the important GHG emission sources often being neglected was the landfill gas. Methane emitted from landfill sites had global warming potential of 21 times higher than that of CO<sub>2</sub>. He noted that some of the landfill gas which could not be utilized was flared off. He learnt from some experts that some of the flaring systems were not very effective and methane would be emitted from the systems. He suggested that tests should be carried out to ensure the effectiveness of the flaring systems. Mr Michael Cheung noted the suggestion and said that a 19 km pipeline had been installed to tap the methane from the North East New Territories Landfill site to the Towngas Production Plant in Tai Po. There were also suggestions for tapping methane from the two existing landfill sites in South East New Territories and North West New Territories. The remaining gas needed to be flared would be substantially reduced.

55. In reply to a Member's enquiry about the proposed study, Mr David Wong said that one of the objectives was to explore all feasible means to enhance the existing policies and measures with a view to coming up with more concrete plans and timelines for implementation. The Member considered that it would be important for the study to include the impacts of climate change on the local ecology.

56. In reply to the Chairman's enquiry, Mr David Wong said that the commercial sector exhibited the highest growth in terms of energy consumption in the past few years. The Chairman said that the proposed study could find out more about the pattern of energy consumption in order to focus efforts to minimize energy wastage. He also suggested that the study should cover the impacts of global warming on different aspects, including health and future development of Hong Kong.

57. In reply to the Chairman's enquiry, Ms Anissa Wong said that the Administration shared the sense of urgency in tackling climate change issues and had been adopting multi-pronged strategies to address the issue. These included promotion of energy efficiency and energy savings, public awareness on the subject and on the adoption of "environmental friendly" lifestyle, in addition to the commissioning of a scientific study to identify adaptation and mitigation measures. On energy efficiency, the department had been working closely with the Energy Efficiency Office under EMSD in promoting various measures, including the BEC. EMSD was conducting a separate consultancy study to

examine the policy options in further promoting the BEC. It was noted that under the current Air Pollution Control Ordinance, CO<sub>2</sub> and other forms of GHG were not listed as pollutants, so proposals to impose a mandatory cap for these GHG would require legislative changes. On the energy mix policy, she agreed that it would be a key area that the Environment Bureau had to address in reducing GHG emissions. On public education, considerations would be made to raise public awareness at individual level with a view to promoting lifestyle and behavioural changes, such as by giving tips to individuals on how to reduce electricity consumption. The department would work closely with relevant departments and green groups in promoting public awareness and education.

58. The Chairman summarized Members' comments as follows –

- (a) Hong Kong should play its part in tackling the problem of climate change. Given the urgency of the matter, the Administration should accord high priority in taking proactive actions to address the problem;
- (b) it was important to have a better understanding of the issue of climate change and its impacts on Hong Kong. The proposed study would be important not only in assisting the Administration in mapping out suitable adaptation and mitigation measures, but also in providing solid scientific analysis of the impacts of climate change and in raising public awareness of the urgency and seriousness of the problem;
- (c) as the matter at issue involved a wide spectrum of bureaux and departments, it would be important for EPD to orchestrate and coordinate efforts of all the stakeholders in pursuing the necessary adaptation and mitigation measures;
- (d) while the Council was pleased to note the wide range of measures being undertaken by the Administration, it urged the Administration to consider more innovative measures in reducing GHG emissions, such as in the use of RE and demand-side management; and
- (e) consideration should be given to organizing a public forum to promote public awareness and tap the views of the interested parties on the way forward.

**Agenda Item 5 : Report of the Environmental Impact Assessment Subcommittee**

*(ACE Paper 14/2007)*

59. The Chairman of the Environmental Impact Assessment (EIA) Subcommittee briefed Members on the Subcommittee's recommendation on the EIA report on Drainage Improvement in Northern New Territories – Package C. The Subcommittee endorsed the report without condition by circulation.

60. The meeting agreed that the Council endorsed the Subcommittee's recommendation and endorsed the EIA report without condition.

**Agenda Item 6 : Any Other Business**

Tentative items for discussion at the next meeting

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

**Agenda Item 7 : Date of Next Meeting**

62. The next meeting was scheduled for 16 July 2007.

(Post-meeting note: The meeting scheduled for 16 July 2007 was cancelled.)

ACE Secretariat  
July 2007