

**Confirmed Minutes of the 132nd Meeting of
the Advisory Council on the Environment
held on 13 March 2006 at 2:30 pm**

Present:

Prof LAM Kin-che, J.P. (Chairman)
Mr James GRAHAM
Prof HO Kin-chung, B.B.S.
Prof Howard HUANG
Prof Paul LAM
Ms Goretti LAU
Mr Peter Y C LEE
Dr NG Cho-nam, B.B.S.
Mrs Mei NG, B.B.S.
Prof POON Chi-sun
Mr Markus SHAW
Ms Iris TAM, J.P.
Mr TSANG Kam-lam
Prof WONG Tze-wai
Prof WONG Yuk-shan, B.B.S., J.P.
Mr Esmond LEE (Secretary)

In Attendance:

Mr K K KWOK, J.P.	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 Benny WONG	Assistant Director (Environmental Compliance), EPD
Mr Arthur CHU	Principal Environmental Protection Officer (Regional West), EPD
Mr TANG Kin-fai	Acting Assistant Director (Waste Management Policy), EPD

Mr TE Chi-wang

Senior Administrative Officer (Waste Management Policy), EPD

In Attendance for Agenda Item 4 :

Mr Howard LEE

Deputy Secretary for Economic Development and Labour (Economic Development)2, Economic Development and Labour Bureau (EDLB)

Miss Emmy WONG

Principal Assistant Secretary for Economic Development and Labour (Economic Development)B, EDLB

Mr Roy TANG

Deputy Director of Environmental Protection (3), EPD

Mr TSE Chin-wan

Assistant Director (Air Policy), EPD

In Attendance for Agenda Item 5 :

Mr MOK Wai-chuen

Principal Environmental Protection Officer (Mobile Source Control), EPD

Mr LAU Hoi-nam

Senior Environmental Protection Officer (Mobile Source Control)1, EPD

In Attendance for Agenda Item 6 :

Mr Esmond LEE

Deputy Director of Environmental Protection (4), EPD

Dr Stephanie MA

Senior Environmental Protection Officer (Cross-Boundary and International)1, EPD

Action

The Chairman welcomed Mr P Y Tam who had replaced Mr Jimmy Leung as Assistant Director/Technical Services of the Planning Department.

Agenda Item 1 : Confirmation of the Draft Minutes of the 131st Meeting held on 21 December 2005

2. The draft minutes were confirmed subject to a Member's proposed amendments to paragraphs 12, 14 and 34 which were tabled at the meeting.

Agenda Item 2 : Confirmation of the Draft Notes of the ACE Open Forum on Policy Framework for the Management of Municipal Solid Waste held on 21 January 2006

3. The draft notes were confirmed without amendment.

Agenda Item 3 : Matters Arising from the minutes of the 130th meeting held on 30 November 2005

Para. 59 Petrochemical Plant in Daya Bay and its Risk Management Measures

4. The Chairman informed members that in response to the Council's letter requesting that the HKSAR Government be notified promptly in the event of a pollution incident at the petrochemical plant which might affect Hong Kong, Shell Hong Kong Limited replied that the complex was being built to, and would operate to, Chinese and international standards. Safety was underpinned by an international-standard Health, Safety and Environment management system adapted from similar systems in other plants that operated successfully in other parts of the world. A variety of scenarios were modeled in the Environmental and Social Impact Assessment on the project which showed that Hong Kong would not be affected in normal operations or emergencies. Despite this, the detailed and tested procedures in place in the event of an emergency did include mechanisms to inform Hong Kong if affected.

5. Upon the Chairman's enquiry about the mechanism to inform Hong Kong, Mr Esmond Lee said that the department did clarify this point with the company. The joint venture considered that it was not in a position to communicate directly with the Environmental Protection Department (EPD) of the HKSAR Government as part of the emergency response plan. Under the emergency response plan, the joint venture was required to report to relevant authorities in the Mainland. The Guangdong Environmental Protection Bureau (GDEPB), which had an established direct communication channel with EPD, undertook to inform EPD in the first instance in the event of an emergency.

6. A Member asked about further monitoring on exceedance during normal operation. Another Member recalled that the Hong Kong Observatory performed certain baseline monitoring measurements in connection with the operation of the Guangdong Nuclear Power Station in Daya Bay. He asked whether EPD could revise the current air monitoring facilities in order to capture early signs of emission problems from the petrochemical plant. He was aware that there were local air monitoring stations capturing information on air toxics on top of criteria pollutants. He considered that these monitoring stations could be devised in such a way that it could provide early indications of concentration differences for certain

chemicals, such as hydrocarbon, in different locations which could help locate the source of high emissions.

7. Mr K K Kwok explained that there were no specific mechanisms to monitor the emissions of individual plants given the large number of installations in the Mainland. The current air monitoring network system could pick up particular emission problems that might affect Hong Kong. Regarding the petrochemical plant, an Environmental and Social Impact Assessment was conducted by independent consultants. With reference to the study results, the department would consider the level of risk that Hong Kong would be likely to be exposed to and whether such level of risk was adequately covered by the existing air monitoring system. The department would continue to reinforce the channel of communication with the counterparts in the GDEPB.

8. A Member suggested that the Council write to the Hong Kong Observatory requesting them to pay attention to signs of emission problems due to the operation of the petrochemical plant in the course of monitoring the emissions of the Guangdong Nuclear Power Station in Daya Bay. The Chairman said that the monitoring conducted by the Hong Kong Observatory was on radioactivity rather than air pollutants. He considered that it was important to secure the assurance from the Guangdong authority so that Hong Kong's internal response plan would be activated to prepare for immediate preventive and remedial actions.

Matters Arising from the Minutes of the 131st Meeting held on 21 December 2005

Para. 4 Hong Kong Disneyland Fireworks Displays

9. The Chairman said that an information note had been issued to Members on the results of an air quality spot check exercise at Discovery Bay on the Disneyland firework display emissions conducted by EPD. A Member declared his interest as part of the monitoring work was undertaken by his company.

10. Upon a Member's enquiry about the criteria in site selection, Mr Benny Wong explained that the Hongkong International Theme Parks Limited (HKITP) was required to carry out monitoring at one site (DB3 at Crestmont Villa Management Office at Discovery Bay) while the spot check conducted by EPD was performed at four different sites at Discovery Bay.

11. A Member said that the measurements of Respirable Suspended Particulates (RSP) shown in Annex 2 and Figure 2 of the information note were significantly higher than those obtained by HKITP. She did not agree that the monitoring results obtained by EPD were comparable to those of HKITP. Another Member shared her views and said that it was desirable for both sets of

measurements to be obtained on the same days or in the same period in order to draw a systematic comparison of the results.

12. Mr Benny Wong explained that it was important to compare the absolute figures obtained from the random check against the background level in the nearby area at the time of measurement. It could be observed from Figure 2 that RSP measurements obtained by HKITP in 2005 and those obtained by EPD in December 2005 to January 2006 correlated closely with the ambient RSP level measured at the Tung Chung monitoring station. The difference between the measurements by HKITP and EPD was likely due to seasonal and/or regional effects of the general air quality in Hong Kong. He highlighted that the purpose of the spot check was to find out whether there would be gross differences between the two sets of data rather than carrying out an elaborate scientific comparison. He also pointed out that the results showed that the RSP measurements were below the Air Quality Objective (AQO).

13. A Member agreed that it was important to interpret the data against the background level at the time of measurement. The RSP measurements obtained by both HKITP and EPD were far below the AQO of $180 \mu\text{g}/\text{m}^3$ and had an insignificant impact on the air pollution level in the atmosphere. Another Member disagreed and considered that the significance of the impact depended very much on the yardstick of $180 \mu\text{g}/\text{m}^3$ as the AQO. There was an international trend of tightening up the AQOs. The Chairman said that the Council would revisit the issue of the AQOs in a separate context.

EPD

14. In response to a Member's enquiry about the influence of wind direction, Mr Benny Wong explained that the wind direction of Day 1 to Day 3 of the spot check was predominately easterly and Discovery Bay was at the downwind side of the Theme Park. The wind direction of Day 4 to Day 6 was mainly northwesterly. The results of the spot check showed that wind direction did not play a major role in affecting the measurements.

15. A Member disagreed to the conclusion of the spot check that the firework displays did not cause an increase in air pollution in the Discovery Bay areas. Another Member said that the conclusion had been drawn on the basis of the data collected. A Member considered that it might be better to rephrase the conclusion to the effect that the firework displays did not significantly increase the air pollution level in the area and the measurements were below the current AQO.

16. Upon the Chairman's enquiry, Mr Arthur Chu confirmed that quarterly air monitoring reports under the environmental monitoring and audit programme would be submitted by HKITP under the Environmental Permit. The Chairman said that the Council would like to receive the reports for further scrutiny.

EPD

(Post-meeting note: An extract of quarterly air monitoring results from the Environmental Monitoring and Audit Report submitted by HKITP had been sent to Members after the meeting.)

Para. 57 ACE Open Forum on Policy Framework for the Management of Municipal Solid Waste

17. The Chairman said that the ACE open forum on Policy Framework for the Management of Municipal Solid Waste had been successfully held on 21 January 2006. 72 participants attended and 13 sets of comments collected.

18. Chairman of the Waste Subcommittee reported that the Waste Subcommittee held a meeting on 20 February 2006 to further study and discuss in detail the implementation of initiatives under the Policy Framework, taking into account comments received at the open forum. The recommendations of the Waste Subcommittee were outlined in ACE Paper 2/2006 which had been circulated to Members before the meeting. In gist, the Subcommittee endorsed the proposed initiatives in the Policy Framework and would like to see early implementation of the initiatives, especially the Producer Responsibility Schemes, Municipal Solid Waste Charging, the EcoPark and Integrated Waste Management Facilities. During the circulation of the paper, a Member raised a comment on resources for implementing the initiatives.

19. A Member elaborated that he would like to seek clarification on the source of funding for implementing initiatives such as sorting facilities in housing estates. Another Member said that the Subcommittee had deliberated on the approach in generating the momentum of source separation of domestic waste. For new buildings, sufficient space should be provided for source separation facilities. For old buildings with limited space, the Government should consider providing some kind of financial incentives for retrofitting the common area.

20. Mr K K Kwok said that there was a funding scheme in place and a number of housing estates had applied for the funding to retrofit the common areas with required facilities. EPD staff also reached out to advise management companies and residents on ways to retrofit the common areas without contravening the relevant building and fire safety regulations, and the availability of government funding for the purpose. The department would provide information to the Waste Subcommittee on the funding for the implementation of territory-wide source separation of domestic waste.

EPD

(Post-meeting note: A paper was scheduled for discussion by the Waste Subcommittee on 6 April 2006.)

21. A Member considered that it was a bit disappointing that not enough resources had been allocated to public education in changing habits and

behaviour. It was important to set a long-term strategy to engage the public. Another Member said that the Subcommittee had discussed and agreed that changing consumer behaviour was an integral part of the whole programme.

22. Chairman of the Waste Subcommittee said that the Subcommittee would take into account the views collected and continue to closely monitor the progress of the key initiatives endorsed by the Council, in particular those with targets and timelines, and report to the Council as appropriate.

Agenda Item 4 : Future Development of the Electricity Market in Hong Kong (Stage II Consultation)
(ACE Paper 3/2006)

23. The Chairman said that the Council had been consulted on the Future Development of the Electricity Market in Hong Kong under the Stage 1 Consultation in March 2005. The Council was very concerned about the development of the electricity market especially from the environmental perspective.

24. A Member declared interest as her company was involved in some consultancy services to the two local power companies but the projects were not directly related to the matter under discussion. Another Member declared interest as he was conducting some research for one of the power companies on the reuse of ash for electricity generation. The Chairman suggested and Members agreed that the two Members could stay and continue to take part in the discussion.

25. Mr Howard Lee briefed Members on the background and objectives of the Consultation Paper on Future Development of the Electricity Market in Hong Kong – Stage II Consultation (the Consultation Paper) and the salient points of the proposals, in particular those related to the environmental aspects.

26. A Member said that he noted that the business sector welcomed the open-minded approach of the Government in planning the future electricity market. The current policy was outdated in that the costs of facilities were passed on to the consumers, the permitted profit level was too high and the charging of different tariff rates in different regions of the territory was unfair. The single chain of producing, wholesaling and retailing electricity should be replaced by open and fair competition. Interconnection with the Mainland should be pursued to reduce tariffs and improve local air quality. Another Member considered that a timetable for facilitating interconnection and grid access should be drawn up.

27. Mr Howard Lee explained that the reliability of electricity supply and compliance with environmental standards were important considerations in pursuing open competition and interconnection in the electricity market.

Preparations would be made to enable grid access for new electricity suppliers and for enhanced interconnection.

28. A Member welcomed the proposals and considered that there was a need to tighten up the emission control. The Government should negotiate with the power companies the idea of contributing a certain portion of their profits to promoting public awareness of energy saving. The policy of opening up the electricity market should be pursued with due care as the stability of electricity supply was a vital factor in Hong Kong's economic success though the tariffs were relatively high.

29. A Member commended the Government on pursuing the Scheme of Control Agreements (SCAs) arrangement, which had ensured the stability of electricity supply, rather than moving completely to an open electricity market.

30. A Member said that he did not agree to the opening up of the electricity market as market failure would be the greatest destructive force on the sustainability of the energy policy and environmental protection. When importing energy from the Mainland, it would be important to ensure that the same environmental standards would be adopted for imported energy to avoid aggravating the pollution problem in the region. This was also important to ensure a level playing field for suppliers. Mr Roy Tang said that the same set of environmental standards would be applied to both local and imported energy sources. Details of the standards would be worked out in consultation with the Economic Development and Labour Bureau (EDLB).

31. A Member strongly supported the proposed environmental measures and considered that the power companies had corporate responsibility to go beyond environmental-related legal requirements for international best practices. He considered that, however, the environmental performance of the power companies would depend very much on the fuel supply and fuel mix in generating electricity. The Government should consider a clear energy policy in defining the required fuel mix, in particular for renewable energy (RE) and other clean energy, for compliance in order to reduce the resistance of the power companies.

32. A Member considered that while the development of RE was in the right direction, it could not significantly solve the problems of air pollution and excess production. The most important means was energy conservation which was in direct conflict with the interests of the power companies. The bonus proposed to be given to compliance with emission caps was not sufficient in improving the air quality. He suggested using the amount of air pollutants per unit of electricity produced as a yardstick in determining the return. Another Member considered that targets on energy conservation should be built in the reward structure, such as on the basis of per capita or floor space, to encourage the power companies and the community to work towards the targets.

33. Mr Howard Lee said that the Government's energy policy was to ensure that the public could enjoy a reliable, safe and efficient energy supply at reasonable prices, and to minimize the environmental impact caused by the production and use of energy. There were no specific requirements in the fuel mix. EDLB was working closely with EPD to set emission caps on major pollutants for individual power plants which could drive them to employ more advanced technology and use cleaner fuel. Records showed that the power companies were emitting less while generating more electricity which meant that the emission per unit of electricity generated was declining.

34. Mr Roy Tang said that the difference in opinion between the Government and the two power companies on achieving the intended emission caps was narrowing. The two power companies had agreed to expedite the implementation of emission reduction measures and should be able to meet the emission caps by 2010. The financial disincentives proposed in the Consultation Paper would be powerful economic tools to drive the companies to meet the targets by completing the retrofitting projects by 2010. The emission caps would be expressed in terms of tonnage per year and specified in the licences. A Member considered that the emission reduction targets agreed with the Guangdong authorities for 2010 were the bottom line which could not be compromised and it would be important to ensure that these targets could be met for achieving the regional objectives.

35. In response to a Member's enquiry, Mr Roy Tang explained that the emission caps were derived from a scientific study conducted by EPD in collaboration with the GDEPB in 1999. The results were available to the public and he would inform Prof Wong of the website. A set of emission caps were generated by computer modeling after taking into account factors such as the economic and population growth and demand for electricity with a view to achieving the target AQOs in Hong Kong and the Pearl River Delta Region in 2010. To achieve the emission reduction targets, a vehicle emission control programme was being implemented with encouraging results and the focus was now on emissions from the power sector.

EPD

(Post-meeting note: The Member had been informed of the website on the Study of Air Quality in the Pearl River Delta Region.)

36. A Member asked about the details of the proposed financial incentives and disincentives. Mr Howard Lee explained that the proposed arrangement would be to set out specific targets with some benchmark indicators. The range of financial incentives would be clearly set out in the SCAs and both EDLB and EPD would be responsible for measuring and monitoring. The reason for some disincentives to be included "where appropriate" was that some areas were not entirely under the control of the power companies, such as savings due to energy conservation which also depended very much on the efforts of users. So long as the power companies had tried to adopt the required measures, they should not be penalized for the outcome of the

measures. On the review mechanism, the proposed post-2008 agreement would include a review of key terms, including the incentive scheme, every five years.

37. A Member considered that the proposed rates of return were on the low side and appropriate rates should be set having regard to the risks of huge capital investment in the electricity market. The profits and rates of return of the power companies had come under close scrutiny in recent years in that investments in the early days were yielding what appeared to be far higher than the acceptable level. Nonetheless, the tariffs in Hong Kong were not at the top end when compared with those in overseas countries given the stability of supply. The period of SCAs should be determined having regard to the long period of return for the large capital investment. A period of 10 years, with five-year reviews, was quite short which might impact on the continuity of supply.

38. Mr Howard Lee said that with the proposed reduction in the permitted rates of return in the new regulatory regime, it was estimated that the electricity tariff would be 10% to 20% lower had these reduced rates been adopted for 2006. The proposed rates of return would be determined based on an integrated approach similar to the calculation of weighted average cost of capital, taking into account factors such as equity risk premium and cost of borrowing. The proposed range of 7% to 11% was considered a reasonable return on the cost of capital. He assured Members that the reliability of electricity supply had been factored in having regard to the survey findings that supply reliability was accorded a much higher priority than tariff rates.

39. A Member considered that since electricity was a basic daily necessity, the rates of return attached to the investment should logically be at the lower end. To encourage the use of RE in the long run, a much higher rate of return, say 15% as compared with the lowest rate of 7%, should be attached to investment in RE facilities to give a clear signal that the long-term investment would gain a much higher yield.

40. A Member said that he could not see the logic for attaching the lowest rate of return to emission reduction facilities. If the emission reduction facilities were considered as part of the power generation facilities, the same rate of return for generation assets should be applied to them. However, incentives should be given to the power companies to improve performance by using better emission reduction facilities. If the element of incentive was added on, these facilities should be granted the same rate of return as the RE infrastructure.

41. A Member considered that priority should be accorded to demand side management (DSM) on energy conservation and efficiency with a long-term strategy and roadmap. Reference should be made to the Japanese example in which a legal framework had been set up to support demand side activities, such as depreciation allowances and low interest loans for energy efficient industries, which had created new business opportunities. In California and New England,

large utilities had to invest about 2% to 4% of their operating revenue in DSM programmes. In a DSM study conducted in Hong Kong in 1997, the consultant recommended a series of DSM programmes such as promotion of energy saving products and introduction of energy service companies. The power companies were producing more than what the users needed. There was a conflict of interest for the power companies to carry out DSM. An independent DSM agency should be set up to push demand side activities and an independent auditing authority was required to monitor the progress. She queried the lack of transparency and governance in the regulatory framework.

42. A Member agreed that DSM and energy efficiency were the most important means to reduce emissions. He considered that the Administration rather than the power companies should be involved in DSM. Another Member considered that DSM should also be the responsibility of the power companies. He noted that the power companies in Canada were very keen on promoting DSM to keep the level of energy consumption low with the encouragement from the State Government. The political and economic considerations were that the building of new power plants would increase the cost of electricity generated as well as the level of emissions. He considered that the Administration should refer to the incentive schemes in Canada which drove the power companies' efforts in DSM.

43. A Member agreed that energy conservation and efficiency were very important. The efforts made in developing cleaner RE energy would otherwise be offset by energy being wasted. Another Member stressed that the Administration should reflect the real cost of power generation beyond the economic sphere, such as the impacts on health and the environment.

44. Mr Howard Lee explained that while the Administration was considering the regulatory arrangement of DSM in the context of the electricity market, there were also other measures on DSM and energy conservation that were going on outside the scope of the Consultation Paper. The Administration had worked with the power companies and introduced a DSM scheme a few years ago mainly for promoting the use of energy efficient equipment in commercial premises and the scheme was concluded. He could not agree with a Member's view that there was no transparency in the process. The publication of comprehensive consultation papers and the two stages of the public consultation process reflected clearly that the Administration placed much emphasis on public opinion and the transparency of the policies.

45. Mr Roy Tang agreed that DSM was not just the responsibility of the power companies and the Government had a key role to play. Various measures were being taken to promote energy conservation and efficiency, such as the mandatory energy efficiency labeling scheme discussed earlier by the Council, publicity programmes to encourage the public to raise the temperature of air-conditioned rooms to 25.5°C and the Government's commitment to taking the lead in reducing power consumption in government office buildings by 1.5%

in 2006. Evidence showed that electricity consumption had reduced last summer as a result of the publicity campaign. The Administration would be looking forward to further opportunities of energy conservation and efficiency.

46. In response to a Member's enquiry about energy-from-waste as RE, Mr Roy Tang said that the meaning of RE in the Consultation Paper was the same as that in the First Sustainable Development Strategy in which RE included traditional sources such as solar energy and wind power as well as energy-from-waste. As to whether there was a need to mandate the power companies to use energy-from-waste, he said that the Government would perform a facilitating role in terms of grid access and connection to the grid. This would be one of the avenues to ensure that energy generated would not be wasted.

47. Upon a Member's enquiry on major sources of emissions and emissions trading, Mr Roy Tang explained that power generation accounted for about 50% of sulphur dioxide (SO₂) and 40% of nitrogen oxides (NO_x) in the region. For Hong Kong, power generation accounted for about 92% of SO₂ and about 50% of NO_x and RSP. It had been the Government's policy to encourage the power companies to engage in emissions trading. A task force had been set up with the power companies in pursuing emissions trading. At the regional level, intensive discussion with the Guangdong authorities was going on with a view to setting up a governmental framework for emissions trading by the third quarter of 2006.

48. A Member was pleased that the reliability of electricity supply at reasonable prices had been secured in the past and hoped that this would continue in the future. He noted that a lot of the focus of the community had been put on emissions from electricity generation for achieving better air quality in the region. However, he considered that the issue of global warming was affecting the whole ecology. It was important that the proposed framework should be flexible enough to take advantage of future development in technology and alternative RE sources. The target of 1% to 2 % RE sources by 2012 was not ambitious enough. He asked whether extra-territorial investment in facilities of RE sources would be allowed given the limited scope for RE sources in Hong Kong and whether the power companies would be obliged to give an option to consumers for paying extra for RE similar to the practices in overseas countries if RE could constitute a larger portion of energy sources in the future.

49. A Member supported the development of RE for electricity generation. He, however, considered it important to ensure that people in the Mainland would not be deprived of the RE sources because electricity was exported to Hong Kong, in particular hydroelectric sources. Otherwise, this would mean that they would have to use other polluting sources of energy.

50. Mr Roy Tang said that flexibility would be built in the emission control system in which the emission caps would be reviewed every two years.

The emission caps could be further tightened in the light of technology advancement and community aspiration.

51. Mr Howard Lee said that the development of RE facilities outside the territory involved complicated issues, such as costly transmission facilities, and considerations had to depend on circumstances. When developing RE sources, including those from the Mainland, the Administration would work very closely with relevant Mainland authorities to take account of the implications on the air quality in the region, not just that of Hong Kong.

52. A Member shared another Member's view that the target of 1% to 2% RE was low. He asked whether the production cost of RE, for example, establishing RE sources in some shallow ocean floors, had been studied. Mr Roy Tang said that a consultancy study had been completed by the Electrical and Mechanical Services Department in 2004 for comparing the relative costs of production of various RE sources. He would inform Prof Huang of the website.

EPD

(Post-meeting note: The Member had been informed of the website on the Study on the Potential Applications of RE in Hong Kong.)

53. A Member welcomed the proposals in general which aimed at ensuring the reliability of electricity supply while minimizing environmental impacts though there were still areas of improvement. He shared the views raised by another Member.

54. The Chairman summarized Members' comments as follows –

- (a) the Council was supportive, in general, of the overall approach laid down in the Consultation Paper;
- (b) in addition to the reliability, safety and efficiency of electricity supply, the Council was concerned about how the future regulatory regime could help improve the environment, in particular air quality, as there was a close relationship between power generation and air quality;
- (c) the Council was supportive of imposing emission caps on major pollutants when renewing the licences of individual power plants. This would enable Hong Kong to achieve the emission reduction targets as agreed with the Guangdong Provincial Government with a view to improving the regional air quality;
- (d) the Council was supportive of the principle that the proposed rates of return should be performance-based which could help drive the power companies to minimize environmental impacts caused by electricity generation;

- (e) the Council was very supportive of facilitating the use and further development of RE for electricity generation;
- (f) the Council urged the Government to pursue a long-term sustainable strategy and roadmap for the electricity market through various means, such as DSM, energy fuel mix, rates of return, enhancement of energy efficiency and public education, to achieve minimal environmental impact;
- (g) the Council considered that the mitigation of environmental impact caused by the production and use of energy was in the community's interest and the goal for minimizing environmental impact should be achieved as early as possible by multi-pronged approaches which should be objective-led; and
- (h) the Council recognized that all sectors of the community including the public, the Government and the power companies had to contribute to the costs of protecting the environment while enjoying the benefit of a stable electricity supply.

55. The Chairman informed Members that the Legislative Council Panel on Environmental Affairs had invited the Council, as one of the deputations, to attend the Panel meeting on 27 March 2006 to discuss the Consultation Paper. The Council could forward a written submission and send a representative to attend the meeting.

56. The Chairman suggested and Members agreed that the Council would forward a written submission to the Panel by summarizing the discussion under this agenda item.

Secretariat

(Post-meeting note: A written submission had been sent to the Secretariat of the Legislative Council Panel on Environmental Affairs.)

57. Having regard to the views raised by a Member on global warming, the Chairman suggested that the issue of greenhouse gas emissions, which was not dealt with in the Consultation Paper, be discussed at future meetings.

EPD

Agenda Item 5 : More Stringent Emission Standards for New Heavy Duty Motor Vehicles and Motorcycles
(*ACE Paper 4/2006*)

58. Mr Mok Wai-chuen briefed Members on the proposal. He

highlighted that Euro IV emission standards for newly registered light duty vehicles not more than 3.5 tonnes had been introduced from 1 January 2006. The current proposal was to extend Euro IV emission standards to newly registered heavy duty motor vehicles from 1 October 2006 and to require newly registered motorcycles to comply with Euro III emission standards from 1 January 2007.

59. In response to the Chairman's enquiry about the need to use urea solution for some Euro IV vehicle models, Mr Mok Wai-chuen explained that only a small number of Euro IV models equipped with selective catalytic reduction (SCR) systems would require the use of urea solution. The vehicle suppliers would provide urea solution refilling services to their customers and were liaising with oil companies for providing urea refilling services at their petroleum refilling stations. The Administration would work closely with the Hong Kong Motor Traders Association to disseminate information on details of the urea solution refilling network. This would help vehicle owners to choose models, SCR-equipped or otherwise, depending on their operational needs. Most of the Euro IV models below 10 tonnes did not require the use of urea solution. For models over 10 tonnes, about 20% of them required the use of urea solution.

60. In reply to a Member's enquiry about safeguarding devices on SCR systems, Mr Mok Wai-chuen explained that the European Union and Japanese Government had issued directives to vehicle manufacturers to provide safeguarding system to ensure that urea solution had to be used for vehicles with SCR systems. For example, the vehicles could only run very slowly when the urea solution was used up or the engine could not be restarted after being switched off. The systems would also keep track of the quality and quantity of urea solution.

61. A Member welcomed the proposal which could reduce air pollution. In response to Prof Wong and the Chairman's enquiry about the anticipated benefit of the proposal on the overall air quality in Hong Kong, Mr Mok Wai-chuen said that it was expected that the pre-Euro heavy duty vehicle fleet would be replaced by Euro IV models in about five years' time. By then, it was anticipated that the emission of particulates and NOx of the entire vehicle fleet would be reduced by 60% and 50% respectively. In terms of the fleet size, pre-Euro heavy duty vehicles were about 40% of the entire vehicle fleet in Hong Kong. Most of them were pre-Euro heavy duty goods vehicles which had a fleet size of about 18,000.

62. A Member considered that the large number of buses running on the roads was an important source of roadside air pollution and measures should be taken to control the emissions. Mr Mok Wai-chuen confirmed that buses would be subject to the tightened emission standards.

63. The Chairman concluded that the Council strongly supported the

proposal and considered it necessary to reduce vehicle emissions so as to improve roadside air quality.

Agenda Item 6 : Draft Hong Kong Implementation Plan under the Stockholm Convention on Persistent Organic Pollutants
(ACE Paper 5/2006)

64. A Member declared interest as he was providing consultancy service to the United Nations Environmental Programme (UNEP) for reviewing the methods of measuring the Persistent Organic Pollutants (POPs) using biological techniques and consultancy service to the Government for studying the impacts of POPs on marine mammals and water bird eggs. The Chairman suggested and Members agreed that Prof Lam could stay and continue to take part in the discussion.

65. Mr Esmond Lee briefed Members on the salient points of the paper and the draft Hong Kong Implementation Plan (HKIP). He highlighted that the Government would need to submit the draft HKIP to the Central People's Government in April 2006 which would form part of the National Implementation Plan for submission to the Conference of the Parties of the Stockholm Convention in November 2006. To strengthen the institutional and regulatory systems, a Hazardous Chemicals Control Bill would be introduced in 2006 to control and regulate the import, export, manufacture and use of non-pesticide hazardous chemicals.

66. A Member asked whether the use of a per capita basis for assessing the annual dioxin/furan emission was appropriate as Hong Kong was a very densely populated area. He considered that assessment on a unit area or per volume basis might be an alternative approach. Dr Stephanie Ma explained that different approaches had been considered having regard to the congested condition of Hong Kong. The per capita basis was finally adopted because the emission of dioxins/furans was mainly related to anthropogenic activities. This approach would facilitate a comparison of emission assessments between Hong Kong and overseas countries.

67. A Member disagreed with the statement in paragraph 4(e) of the paper that "there was no inhalation nor dietary chronic/carcinogenic risk of toxicological concern". He said that he had conducted a consultancy study for EPD on various toxic air pollutants a few years ago. Based on the health impact assessment, it was found that the dioxin and dioxin-like substances accounted for about 10 excess cases of cancer annually. Though the figure was insignificant as compared with other major air pollutants, such as 7,000 lung cancer cases per annum due to human exposure to diesel, it would be more accurate to say that there was "low" risk rather than "no" risk. Dr Stephanie Ma explained that cancer was a non-threshold end-point. When assessing the carcinogenic risk, a line had to be drawn on the acceptable range of risk. The acceptable range of 10^{-4} to 10^{-6} used by the United States

Environmental Protection Agency was adopted in the present risk assessment. The risk assessment results indicated that the risk level was well within the above acceptable range and therefore it was concluded that “there was no inhalation nor dietary chronic/carcinogenic risk of toxicological concern”. The Member considered that the acceptable range referred to unit risk rather than the overall or actual risk. Another Member commented that it would be very difficult to establish zero risk. Dr Ma clarified that the statement in paragraph 2.5.3 on page 28 of the draft HKIP would better represent the risk level which stated that “results of the health risk assessment indicated there was no unacceptable risk of toxicological significance associated with inhalation and dietary exposure of the Hong Kong population” and suggested adding the qualifying word “unacceptable” to paragraph 4(e) of the paper to avoid possible misinterpretation.

68. The Chairman observed that the assessment of current POPs pollution in Hong Kong’s environment summarized in paragraph 4 of the paper referred to different dimensions. Dr Stephanie Ma confirmed that the assessment involved different dimensions, including emission per capita in paragraph 4(a), concentration level in paragraph 4(b), exposure level in paragraphs 4(c), (d) and (f), and risk level in paragraph 4(e) as the data were compiled with reference to the emission inventory, environmental contamination level, dietary exposure and human body burden.

69. A Member enquired whether the level of POPs contamination in the marine environment of Hong Kong referred to the overall marine sediment in Hong Kong or the marine sediment of some specific areas as some areas such as Victoria Harbour, Tsuen Wan and Kwun Tong were rather polluted with a high concentration of toxic materials including POPs. Dr Stephanie Ma explained that the assessment referred to the overall marine environment of Hong Kong which was the average of four individual sets of data collected from four different water zones: Victoria Harbour, eastern, southern and western parts of Hong Kong water. It was found that the level of POPs including dioxins/furans and polychlorinated biphenyls in Victoria Harbour was not significantly higher than those in other marine areas. Thus, the result was representative of the overall pattern of the Hong Kong marine environment.

70. A Member welcomed the HKIP in general and considered it the most comprehensive report on POPs in Hong Kong so far. He supported the proposal of introducing legislation to control hazardous chemicals. He asked why drinking water, unlike food items, was not included in the assessment of POPs. Mr Esmond Lee referred to the action items concerning dietary exposure to POPs on page 33 of the draft HKIP and pointed out that the Water Supplies Department had been requested to include all 12 Convention POPs in the routine drinking water surveillance programme. Their current surveillance programme included about 6 POPs. He highlighted that as a substantial proportion of POPs came from dietary intake, the Food and

Environmental Hygiene Department (FEHD) would include all 12 Convention POPs in the routine food surveillance programme. In addition, FEHD had commissioned a population-based local food consumption survey and the results were expected to be available in 2008. The outcome of the survey would help the Administration better refine the estimation of dietary exposure of local residents to POPs and relevant risk assessment.

71. A Member echoed another Member's comments that it was a welcomed move. He thought that Hong Kong had no choice but to do it well. After attending the consultation workshops, he observed that the public was quite unfamiliar with the POPs topic. Mr Esmond Lee agreed that it was essential to raise public awareness of POPs-related issues. Thus, a public awareness campaign had been included in the proposed action plan. EPD would soon launch a dedicated website on POPs and integrate the topic into the overall environmental protection education programme.

72. A Member agreed that capacity building was very important in combating the POPs problem. Hong Kong and countries such as Japan and South Korea were among the few which had the capability of measuring POPs. He encouraged EPD to publicize good practices in measuring and controlling POPs so that other countries could benefit from the experience. Mr Esmond Lee said that the Administration was actively liaising with the academics of Hong Kong and Guangdong and would encourage technical exchange and cooperation among them. As part of capacity building, EPD would publicize useful references including good practices in measuring and controlling POPs based on the local experience.

73. A Member said that on top of the 12 POPs, there were also a few chemicals that were of environmental concern but agreement had yet to be reached on including them under the Convention. He suggested that some flexibility be built in the relevant legislation to allow the inclusion of new types of chemicals. Mr Esmond Lee assured Members that flexibility would be incorporated in the Hazardous Chemicals Control Bill. The control would not be confined to the 12 POPs, other chemicals considered to pose adverse or harmful effects on human and the environment could be included. For example, the Bill would also regulate hazardous chemicals under the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, which had yet to be applied to Hong Kong. The Rotterdam Convention dealt with the trading of chemicals that were not as hazardous as the POPs.

74. A Member considered that carriers' concern about the impact of the new legislation on their air transshipment business was understandable as the cargo concerned would only stay in Hong Kong for a few hours. He was pleased to learn that the Government was considering a measure to facilitate air transshipment trade and this could gain more support from the general public. Mr Esmond Lee said that without compromising our compliance with

the international conventions, the Administration was considering a trade facilitation measure for air transshipment cargo.

75. A Member welcomed the HKIP and introduction of the Hazardous Chemicals Control Bill. He enquired whether any study had been conducted to assess the impact of thermal waste treatment having regard to the proposed development of the Integrated Waste Management Facilities for municipal solid waste. Mr Esmond Lee said that the Stockholm Convention did not prohibit incineration. Nonetheless, the best practicable means should be adopted for incineration. The current assessment of the POPs level was based on the latest available data in 2003. Under the Stockholm Convention, each contracting party was obliged to review regularly its implementation plan. Subject to such review period as might be decided by the contracting parties, Hong Kong intended to prepare another HKIP in about five years' time. The assessment on the impact of incineration if pursued would be reflected as far as possible in the POPs inventory in the next HKIP.

76. A Member welcomed the HKIP. However, he considered that the dioxin/furan emission factors adopted from UNEP might not be applicable in the local context. For example, the "Summary of Annual Dioxin/Furan Emission Inventory in Hong Kong for Year 2003" on page 10 of the draft HKIP showed that ferrous and non-ferrous metal production, rather than power generation, was the highest source of dioxin/furan emission. In Hong Kong, there should only be a very limited number of factories working with ferrous and non-ferrous metals. Mr Esmond Lee said that the Administration had the same observation and therefore an action item had been included on page 32 of the draft HKIP to establish a more representative local annual activity and emission factor of the "aluminium production" process. For the current assessment, the emission inventory was compiled based on the available annual activity data as reported by the local industries and/or trade data from the Census and Statistics Department in 2003. It might be that the scrapped aluminium imported was for re-export without going through any secondary process in Hong Kong. Thus, there was a need to establish more accurate local activity and emission factor to refine the overall assessment of POPs in Hong Kong.

77. The Chairman concluded that the Council welcomed the paper and supported the proposed actions set out in the draft HKIP. The Council considered that although Hong Kong was a small place, it should perform its role as a responsible global citizen by implementing this global treaty with a view to protecting human health and the environment from POPs.

Agenda Item 7 : Any Other Business

Policy address - environmental protection scrutiny

78. The Chairman noted that the Policy Address in 2005 stated that

in future all new major government policies would be subject to environmental protection scrutiny. He considered that it was a necessary and good move as efforts in environmental protection should be proactive rather than reactive. He hoped that the Administration would provide the details on the proposed implementation approach of the environmental protection scrutiny.

EPD

Tung Chung to Ngong Ping Cable Car Project

79. A Member noted from the media the environmental management problems and impact of construction work on the natural environment and ecology of Ngong Ping during the construction phase of the Tung Chung to Ngong Ping Cable Car Project. He expressed concern and would like EPD to liaise with the project proponent (MTR Corporation Limited) and obtain information on the latest development. Chairman of the Environmental Impact Assessment (EIA) Subcommittee suggested that the issue be followed up by the EIA Subcommittee as the project had gone through the EIA process and was under the monitoring of the environmental monitoring and audit programme.

EPD

Tentative Items for Discussion at the Next Meeting

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

Agenda Item 8 : Date of Next Meeting

81. The next meeting was scheduled for 10 April 2006.

ACE Secretariat
March 2006