

**Confirmed Minutes of the 128<sup>th</sup> Meeting of  
the Advisory Council on the Environment  
held on 15 August 2005 at 2:30 pm**

**Present:**

Prof LAM Kin-che, J.P. (Chairman)  
Dr NG Cho-nam, B.B.S. (Acting Chairman for Agenda Items 4 to 6)  
Mr James GRAHAM  
Prof HO Kin-chung, B.B.S.  
Ms Goretti LAU  
Mr Peter Y C LEE  
Mrs Mei NG, B.B.S.  
Mr Markus SHAW  
Mr TSANG Kam-lam  
Prof WONG Tze-wai  
Prof WONG Yuk-shan, B.B.S., J.P.  
Mr Esmond LEE (Secretary)

**Absent with Apologies:**

Prof Howard HUANG  
Prof Paul LAM  
Prof POON Chi-sun  
Ms Iris TAM, J.P.

**In Attendance:**

Mr K K KWOK, J.P.	Permanent Secretary for the Environment, Transport and Works (Environment)
Mr Roy TANG	Deputy Director of Environmental Protection (3), Environmental Protection Department (EPD) (for Agenda Item 4)
Mr C C LAY	Assistant Director (Conservation) Agriculture, Fisheries and Conservation Department
Mr Jimmy LEUNG	Assistant Director/Technical Services Planning Department
Ms Monica KO	Principal Information Officer, EPD
Ms Josephine CHEUNG	Chief Executive Officer (CBD), EPD
Miss Sarah NG	Executive Officer (CBD), EPD

### **In Attendance for Agenda Item 3 :**

Mr John LINDSAY	Executive Director, External Relations, Hongkong International Theme Parks Limited (HKITP)
Ms Winnie HO	Director, Government & Environmental Affairs – Public Affairs, HKITP
Ms Tina CHOW	Development Manager, Entitlements, HKITP
Mr Roger HEARTSNER	Project Director, Creative Entertainment, HKITP
Mr Kraig BLYTHE	Producer – Firework & Parkwide System, HKITP
Ms Esther WONG	Manager, Public Affairs, HKITP
Mr Andrew JACKSON	Managing Director, Environmental Resources Management (ERM)
Mr Freeman CHEUNG	Executive Director, ERM
Ms Michelle LEE	Senior Consultant, ERM
Miss Winky SO	Assistant Commissioner for Tourism, Tourism Commission, Economic Development and Labour Bureau
Mr Elvis AU	Assistant Director (Environmental Assessment), EPD
Mr Simon HUI	Principal Environmental Protection Officer (Regional Assessment), Environmental Assessment Division, EPD

### **In Attendance for Agenda Item 4 :**

Mr Eric CHAN	Assistant Director (Conservation), EPD
Mr T P UY	Assistant Director (Energy Efficiency), Electrical and Mechanical Services Department

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### Action

#### **Agenda Item 1 : Confirmation of the draft minutes of the 127<sup>th</sup> meeting held on 11 July 2005**

The draft minutes were confirmed subject to the following amendments proposed by a Member (tabled for Members' reference) -

- (a) To add “A Member said that the air quality in Hong Kong was by a long way the public's highest environmental concern. His past experience of fireworks displays at Chinese New Year and other festivities in the Harbour was of huge clouds of smoke being created – sometimes obscuring even the display itself. In these circumstances, it would be of major concern to the community to discover that a fireworks display of approximately

10% to 12% of the explosive power of the Chinese New Year display would occur at Disneyland on a nightly basis.” at the beginning of paragraph 39.

- (b) To replace “Recognizing that the EIA report ... the project proponent should” at the beginning of paragraph 41 by “A Member expressed disappointment that he was not a member of the Council in 2000 when the original item was discussed, as he would then have raised strenuous objection to the whole idea of a daily fireworks display. However, be that as it might, the strict wording of Condition 3.1 of the EP required the project proponent only to”; and to replace “He considered that ... for DEP’s consideration” at the end of paragraph 41 by “The project proponent had satisfied the requirements of the Condition and it was not open to the Council to re-open the issue; it could only comment and offer advice to the Director for his further consideration. Furthermore, it was incumbent on the Council to adopt a science-based approach in its deliberations and the results of the tests were well within the parameters agreed beforehand with the EPD.”
- (c) To add “A Member said that fireworks were 19<sup>th</sup> Century products. We were in the 21<sup>st</sup> Century now and we could combine information technology or audio visual for the firework shows.” at the end of paragraph 43.

2. The Member said that at the last meeting, he had meant to have queried how it would be possible to justify the nightly fireworks displays to the public in the context of a whole range of other strenuous efforts to improve air quality in even minor ways, such as the emission reduction devices discussed at the last meeting; and to have asked whether it would be possible to consider other forms of modern technology, for example, lasers, to create an entertaining nightly show without the need for fireworks. Unfortunately such points were apparently not explicitly made at the last meeting. This notwithstanding, he would like the points to be recorded in the minutes of today’s meeting. The Chairman and Members agreed.

3. The Chairman said that he had to leave early at 5 pm due to some urgent commitments. He would then hand over the chair to the Chairman of the EIA Subcommittee.

**Agenda Item 2 : Matters arising from the minutes of the 127<sup>th</sup> meeting held on 11 July 2005**

***Agenda item 4 : Hong Kong Disneyland Fireworks Trial Test Results***

4. The Chairman suggested dealing with this at the end of matters

arising as it related to Agenda Item 3.

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

Para. 66      Public comments on EIA reports

5.            The Chairman said that the Environmental Protection Department (EPD) would forward to the Secretariat public comments received on Environmental Impact Assessment (EIA) reports in a timely fashion so that EIA Subcommittee Members could take note of the public comments received before the scheduled Subcommittee meeting date. For public comments received by the department after the scheduled meeting date, the Secretariat would send them to all Council Members before the following full Council meeting.

Para. 69      Overall picture and latest developments of contaminated mud disposal

6.            The Chairman said that in the letter to EPD on the EIA report, the Secretariat had incorporated the Council's request for a briefing by the Civil Engineering and Development Department (the project proponent) on the overall picture and latest developments of contaminated mud disposal.

***Agenda item 6 : Any Other Business***

Para. 70      Proposed Overseas Visit

7.            The Chairman informed Members that due to unforeseen reasons, the visit to Shanghai and Tokyo originally scheduled for September 25 to 29 would have to be rescheduled, probably to November. The Secretariat would consult Members on their availability for the revised schedule.

**Agenda Item 2 (Partial) and Item 3 :**

**Hong Kong Disneyland Fireworks Trial Test Results**

**Hong Kong Disneyland Fireworks Dress Rehearsal Air and Noise Monitoring Results**

***(ACE Paper 19/2005)***

8.            A Member informed Members that she had secured a letter together with a letter of agreement between Disneyland Resort and South Coast Air Quality Management District in California, a local regulatory agency, which clearly stated that there were alternatives in fireworks technology. She circulated copies of the letter to Members.

9. The Chairman noted that a Member had declared interest regarding this discussion item at the last meeting. Another Member also declared interest as his organisation had conducted part of the air monitoring work for the project. The Chairman suggested and Members agreed that both Members could stay at the meeting without participating in the discussion.

10. The Chairman recapped the discussion on the fireworks trial test results at the last meeting. The Council had taken the view that there were some gaps in the monitoring data, particularly with regard to Respirable Suspended Particulates (RSP) and noise level; and the project proponent should conduct environmental monitoring and audit (EM&A) for at least one year and report to the Council the actual air quality and noise data two months after the commencement of operation. To address Members' concerns, the Hongkong International Theme Parks Limited (HKITP) had been required to conduct additional monitoring, which it did in early August. The monitoring report was submitted to the Council for discussion. The Chairman suggested and Members agreed that the Council should continue the discussion on the trial test results and discuss the monitoring report at the same time.

11. A Member suggested and Members agreed that the Council should first discuss whether the monitoring results fulfilled the condition in the Environmental Permit (EP), which was part of the EIA process, and then discuss other related issues.

12. A Member pointed out that some questions raised by Members at the last meeting had not been answered, such as the contingency plan, chemical composition of fireworks and a comparison of the local trial with the Orlando trial. She considered it would be necessary to bring up these issues again.

13. A Member asked about the specific follow-up action requested by the Council in 2000. She had checked with some ex-Council Members, who recalled that the issue of contingency in the case of very poor air conditions had been discussed. She would also like to know whether the issue of frequency of firework shows and reasons for choosing Orlando rather than California for the trial test had been discussed.

14. Mr Elvis Au briefed Members on the background of the EIA report. Under the EIA system in Hong Kong, EIA was conducted to confirm the environmental acceptability of projects. Under normal circumstances, the EIA process included gathering baseline information, making predictions through modeling on potential environmental impacts and the likely worst-case scenario, and using the predictions to see whether the predicted impacts would meet the relevant environmental requirements. The accuracy of the predictions would be verified through operational monitoring. The EIA study on fireworks displays conducted in 2000, similar to studies on other major projects, basically adopted this approach. As the nature of the project

was new to Hong Kong and some concerns raised, the project proponent conducted a fireworks trial test in order to confirm that the modeling approach and predictions were in order. Trial tests were not a standard requirement in the EIA process as it was difficult to conduct a trial before the completion of a project. After much discussion, the project proponent considered that Orlando could be a place for conducting the trial, taking into account various considerations such as the availability of facilities and equipment. Mr Au added that the trial had been designed for the Hong Kong situation with the purpose of confirming the EIA methodology and verifying the predictions. No matter where the trial was conducted, so long as a suitable monitoring programme was designed, the results could be used for verification. The report on the Orlando trial was presented to the Council and the report largely addressed most of the concerns at the time. Some Members then considered that it would be worthwhile to conduct a local trial test before the operation of the theme park to further confirm the EIA predictions and results of the Orlando trial. This was included as a requirement in the EP.

15. Mr Elvis Au said that two EIA Subcommittee meetings and one full Council meeting had been devoted in 2000 to discussion on the EIA report. According to the records, the issue of air quality impact had been thoroughly discussed. The EIA Report clearly stated that the standard of the local air quality i.e. the 24-hour RSP should be adopted and this was clearly conveyed to Members in 2000.

16. The Member further asked why Orlando rather than California had been chosen as she considered that if there were already baseline pollution concerns such as those in California, a trial test if conducted there might have given a different picture. The cumulative impact of background pollution could not have been taken into account in Orlando, where there was a less densely populated community near the trial site. Mr Elvis Au explained that the EIA methodology provided for baseline measurement to which the impact of the project was added. The objective was to assess the extent of additional contribution from a particular activity. In the case of the Orlando trial, the purpose was to analyze how much pollution the fireworks would bring about to the background and verify the predictions. For the local trial, the baseline in Hong Kong had been used and the additional impact of the fireworks subsequently added. Thus, no matter where the trial was conducted, the prime objective was to capture the additional impact. This was an internationally accepted approach in verifying predictions. Another Member agreed that it did not really matter where the trial was conducted. The purpose was to validate the simulation models but not to validate the impact. The impact would be assessed, having regard to the baseline of the local situation and the additional impact of a particular activity. Thus, the methodology was not an issue in 2000. The Chairman requested Mr Au to send the Member a copy of the Orlando report.

(Post-meeting note: A copy of the Orlando report had been sent to the Member

after the meeting.)

17. A Member asked how the background air pollution in the nearby area such as Tung Chung or Discovery Bay had been predicted in 2000 as the situation was totally different after five years. Mr Elvis Au explained that based on the air quality modeling methodology, the project proponent conducted baseline monitoring and used the best available information at that time to project the baseline plus the additional impact. The purpose was to capture and present the likely worst-case scenario based on a whole range of meteorological conditions.

18. A Member noted that in 2000, the considerations relating to the project were subject to the EIA process and the criteria restricted by the legal parameters at the time. He considered that these should not now prevent the Council from standing outside the parameters and looking at the issue guided by general wisdom, having regard to the very serious air pollution problem in Hong Kong and the fact that the fireworks displays would be about 10% to 12% of the explosive power of the Chinese New Year display on a nightly basis, a rather big contributor of air pollution. He reiterated his earlier query about how it would be possible to justify these nightly fireworks displays to the public in the context of a whole range of other strenuous efforts to improve air quality in even minor ways, such as the emission reduction devices discussed at the last meeting; and whether it would be possible to consider other forms of modern technology, for example, lasers, to create an entertaining nightly show without the need for fireworks. He considered that the Council could consider the issue as far as the legal requirements were concerned but at the same time make general comments from a broader perspective of environmental concerns. The Chairman agreed that the Council should first focus on the issue of compliance with the condition in the EP, and then take a broader approach in considering related environmental issues.

19. A Member proposed that the discussion on the broader issues should take place after the presentation team had left. The Chairman agreed, but considered it necessary for the Council to have an opportunity to ask the presentation team for clarifications on technical issues before the discussion.

(The presentation team joined the meeting at this juncture.)

20. Mr John Lindsay and Mr Andrew Jackson briefed Members on the monitoring results of the fireworks dress rehearsal conducted in early August. The Chairman relayed the comments on RSP data made by a Member (who could not attend the meeting). The Member's comments were that the low values presented had not been unexpected as they were the averages of 24-hour measurements when the real firework lasted for only less than ten minutes. The Member asked whether real time monitoring had been made, what the maximum RSP concentration recorded was and whether health

and environmental impact and risk due to short-term exposure had been considered. Mr Andrew Jackson said that the presentation at the last meeting showed that the short-term concentration measured on the site during the monitoring in May complied with relevant standards and guidelines. The one-hour RSP measured was less than 10% of the relevant standard i.e. occupational exposure limit (OEL) and there was a significant margin between the OEL and level of concentration measured.

21. A Member asked about the absolute terms in concentration and whether the monitoring results for August could capture the peak of the plume as what the trial did in May. Mr Andrew Jackson said that the on-site concentration level reported in absolute values rather than relative terms was reported in Table 2.5 of the last monitoring report. He clarified that the results for May showed both the real time measurement for on-site monitoring as well as 24-hour average for off-site monitoring while the results for August were only confined to 24-hour average for off-site monitoring as it was relevant to the measurement for air sensitive receivers.

22. A Member asked whether the monitoring protocol was the same for the several days in August and why August 8 had been chosen for presenting the data. Mr Andrew Jackson said that the off-site high volume air sampling monitoring protocol was the same in both rounds of monitoring (May and August). The only difference was that redundant equipment had been put in place for the monitoring programme in August to ensure collection of a complete set of data for at least one night. August 8 had been chosen as the maximum night because it was the night during which the highest noise levels had been recorded at the agreed locations during the three nights of monitoring. Nevertheless, the full set of results for the three days, i.e. August 4, 7 and 8 (no rehearsals on August 5 and 6) was all presented in Annex B to the report and the presentation at the meeting. They had not been selective in presenting part of the data for a certain day.

23. The Member asked further about the definition of the maximum night. Mr John Lindsay explained that as one-night complete set of monitoring data was required, the night with the highest noise level recorded had been chosen as the maximum night. As for air quality measurement, Mr Andrew Jackson explained that the two rounds of monitoring had shown that the levels of RSP at off-site locations were significantly lower than the statutory RSP criterion and the results were similar to the typical overall levels in Hong Kong, such as that measured at Tap Mun. The Member considered it misleading as the wind direction and wind speed would be different in winter when the sites were at the downwind locations. Mr Jackson pointed out that Discovery Bay and Peng Chau were in the downwind locations with northerly wind on May 6 and the results showed that the level of RSP was also typical of the background levels in Hong Kong.

24. A Member asked why additional off-site monitoring locations



had not been chosen in view of the complaints received from local residents. One of the Members suggested at the last meeting that monitoring locations should be set up near the more densely populated areas. Mr Andrew Jackson explained that the air monitoring locations (i.e. Discovery Bay and Peng Chau) had been chosen on the ground that they were representative of the nearest air sensitive receivers to the theme park and the impacts would be expected to be the most significant. This was in line with the requirement under the EIA Ordinance.

25. Upon a Member's enquiry on the wind directions on the two rounds of monitoring, Mr Andrew Jackson said that the dominant wind direction was northerly for May 6 and easterly to south-easterly for May 7 in the first round of monitoring; and easterly to south-easterly for August 8 in the second round of monitoring. The wind direction for May 7 and August 8 was that of typical summer monsoon while that for May 6 was that of winter monsoon.

26. Mr K K Kwok explained that the choice of monitoring locations had been clearly explained on pages 3 and 4 of the monitoring report and the stations were situated where there were sensitive receivers. The methodology and locations of making the measurements had been agreed with EPD before the consultant carried out the measurement. The department was satisfied that they had been properly chosen.

27. A Member asked about the wind direction and highest wind speed on the seven days of monitoring. Mr John Lindsay clarified that the monitoring results presented only included three days up to August 8 due to the time constraint for processing and analyzing the data. Mr Andrew Jackson said that the wind direction was mainly easterly to south-easterly which was typical of wet season in summer. The highest wind speed was  $2.5 \text{ ms}^{-1}$ ,  $2.8 \text{ ms}^{-1}$  and  $3.6 \text{ ms}^{-1}$  for May 4, 7 and 8 respectively. For August 8, the average wind speed was  $2.3 \text{ ms}^{-1}$ , ranging from  $0.4 \text{ ms}^{-1}$  to  $3.6 \text{ ms}^{-1}$  as wind speed changed over time during the monitoring period.

28. A Member asked how conclusive the results could be given that the two monitoring locations were at the upwind locations on August 8. Mr Andrew Jackson explained that the data of May 6 were representative of the condition in which the wind was blowing from the fireworks displays to the sensitive receivers. The concentration measured was well within the 24-hour RSP standard. He highlighted that the purpose of the monitoring work was to validate the predictions in the EIA report. All meteorological conditions, including stability class, wind speed and direction, were covered by numerical modeling in the EIA report. The monitoring results supported the EIA predictions that the fireworks programme would not cause a significant air quality impact to the surrounding air sensitive receivers. It would be important to look at the whole package of the EIA process which included numerical work as well as monitoring work.

29. The Chairman put the trial and monitoring data in the context of the EIA process. He explained that the modeling assessment method on different meteorological conditions had been adopted in the EIA report in 2000 to give an overall idea of the possible impacts of the fireworks displays. It was considered that trial tests before the operation would be useful to validate the methodology used. It was also recognized that the tests, which would be conducted at a certain time of the year, could not represent all possible meteorological conditions in a year. Mr Elvis Au said that according to the records in 2000, Members noted that the ongoing impact of the project would be monitored by the EM&A programme which would be a tool to follow through the findings under different seasonal conditions.

30. The Chairman relayed the questions from a Member on noise measurement i.e. what the maximum noise level recorded at the Cherish Court was and whether “impulsive factor” had been considered. Ms Michelle Lee said the maximum noise level recorded at the Cherish Court was 53 dB(A) measured on August 8. The noise criterion for fireworks adopted was  $L_{eq, 15 \text{ min}}$  which had already taken into account the impulsiveness character of the noise measured. A Member considered that impulsive noise could not be equated with  $L_{eq, 15 \text{ min}}$ . Mr Elvis Au explained that the appropriate standard to be used had been carefully considered in 2000 in line with the international and local acoustic principles. Under the Noise Control Ordinance, the energy equivalent, mainly  $L_{eq, 30 \text{ min}}$  for measuring energy over 30 minutes, was adopted which was an internationally accepted way to reflect the annoyance effect of noise. However, in view of the short duration and frequency of the fireworks displays as well as tranquility of the area nearby, it had been decided that  $L_{eq, 15 \text{ min}}$  be adopted which was a very stringent standard. The department was satisfied that the impulsive factor had been incorporated in the measurement. The Chairman pointed out that various applicable environmental standards were laid down in Chapters 3 and 4 of the EIA report.

31. A Member considered that both the air quality and noise levels shown in the monitoring report had met the relevant criteria. He considered that it would be useful for the project proponent to explain the impact of relative points of noise level as the noise scale was logarithmic and the impact of 53 dB(A) was substantially lower than that of 55 dB(A). Ms Michelle Lee said that noise calculation was logarithm-based. In terms of energy level, an increase or decrease in the noise level by 3 dB(A) in fact doubled the amount of energy. Comparing the maximum measured noise level of 53 dB(A) with the criterion of 55 dB(A), the energy balance involved was about 80%.

32. A Member said that the whole exercise had been based on measuring the impacts of the outfall of fireworks at certain locations which was what the project proponent had been required to do. However, getting away from the EIA process, he would like the project proponent to consider

the polluting effect and total emissions of the firework explosions. Mr Andrew Jackson responded that different media had different dispersive properties and most of the prevailing assessment standard was concentration-based. The concentration level of a relatively large amount of substances in a medium dispersed readily would be lower than in a medium dispersed at a lower speed. The concentration level was the basis for undertaking the present assessment. The Member said that given the grave concern of the community about air quality, the emissions of fireworks would add a load to the air pollution problem.

33. Regarding his enquiry about the composition of fireworks raised at the last meeting, a Member asked for information on the types of metals in the fireworks, including substitutes for prohibited materials, in view of the grave public concern. Mr John Lindsay said that there was a rigorous process for approving the fireworks to be used. Mr Kraig Blythe added that the manufacturers were required not to use any metals in the prohibited list. Disney had submitted the composition of the fireworks, which was specifically designed for the Hong Kong Disneyland (HKDL), to relevant departments (including EPD) for review in order to ensure that the fireworks met all relevant requirements and standards under the EIA Ordinance. Approval had been given in April 2005. The metals used were mainly standard types for creating colour, such as copper, barium and black powder, but they did not have specific details of the composition in hand. The Chairman drew Members' attention to Condition 3.5 of the EP, which stated that pyrotechnics or fireworks that contained chromium, lead, mercury, arsenic, manganese, nickel or zinc should not be used for any display in the theme park.

34. A Member was concerned about the quality control and source supply of the fireworks. He asked whether the products would be provided by the same reliable suppliers and materials used were registered with the Food and Drug Administration in the United States and approved by the local authorities. Mr John Lindsay said that the production of the fireworks, including formulae, suppliers, shipping and the manufacturing process, was very carefully controlled. This would be very important as the same firework show would be repeated every night to give visitors the same guest experience. Mr Kraig Blythe added that the four vendors selected had established long-term relationship with Disney Company and they had been providing firework products to other Disneylands. Disney had imposed very stringent requirements on their quality control processes and the products had to go through several approval processes including registration with the Department of Transportation in the United States for safety purposes. As part of the quality control programme, Disney staff also travelled to the vendors from time to time to review the manufacturing process to ensure all standards were met. Detailed information would be submitted to the relevant Government departments. Mr Elvis Au informed Members that fireworks were also controlled under the Dangerous Goods (General) Regulations administered by the Secretary for Home Affairs.

35. A Member said that there was a leftover question from the last meeting about the contingency plan in case of really very bad air conditions in the nearby district. She noted that something had been done for the residents in California. Mr John Lindsay said that they did not anticipate this would be an issue nor a need to do anything at this stage, but there would be ongoing operational monitoring in the process. Ms Tina Chow added that they would have an ongoing operational programme at Discovery Bay and Peng Chau for air quality and noise monitoring and a plan was in place. In case of exceedance, action would be taken to rectify the situation. The actions, depending on the level and frequency of exceedance, would include reviewing the monitoring data and ascertaining the source of exceedance. If the exceedance was determined to be contributed by the firework shows, they would review the fireworks components and make changes accordingly. Mr Lindsay said that he might have misunderstood the question as whether they anticipated that it would happen and thus he had replied that he did not anticipate it to happen. The EM&A programme, which had been submitted to EPD, would be in place for ongoing monitoring. The Chairman pointed out that the records in 2000 showed that the Commissioner for Tourism, acting on behalf of the project proponent, said that in case of exceedance of AQO, they would consider adjusting the programme and even terminating the firework shows.

36. A Member asked about the cumulative impact of the fireworks displays on the health of people near the launch area, in particular on-site staff members, having regard to the close distance and daily basis of the shows. Mr Andrew Jackson said that the on-site monitoring conducted in May had specifically addressed this issue and characterized the emissions. The results showed a comparison of the on-site concentration with the OEL. They considered the OEL a conservative basis for comparison as it was based on the assumption that the workers were exposed to emissions eight hours a day. He highlighted that there was a significant safety margin between the on-site concentration measured and the standard of OEL.

37. A Member asked for the reason for not recommending the air launch technology used in California, which could reduce air and noise pollution by about 60%. She understood that the residents in Discovery Bay had recommended this technology in April/May and she asked why it had not been seriously considered. Mr John Lindsay said that the air launch was a recent technology of fireworks displays which required certain circumstances, including larger shows and a higher altitude when compared with the shows in Hong Kong. Mr Kraig Blythe explained that air launch technology had been specifically designed to deal with the lift charge underneath the aerial shows which lifted the firework devices to a certain height. It used compressed air instead of black powder to lift the aerial devices. The larger the shows, the heavier they would be and it would require more lifting force to reach a higher altitude. This would be suitable for fireworks of about 12 inches, similar to

some used in Victoria Harbour shows, which could lift the fireworks to a high altitude of about 2000 to 2300 feet. For the firework shows in HKDL, the size of the fireworks was about 3 inches which was significantly smaller. Moreover, the height of the shows was subject to a height restriction due to the proximity to the airport. The lifting force required would be much less and thus the amount of black powder used would be much smaller. The amount of black powder that would be discharged would be less than 1% of the total net explosive quantity (NEQ) which was considered not a noticeable amount in the monitoring programme. Disney considered that the compressed air launch technology could not address the specific problems in Hong Kong.

38. A Member circulated the letter and letter of agreement between Disneyland Resort and South Coast Air Quality Management District in California to the presentation team. She said that the letter explained the merits of the air launch technology and Disney had promised a low emission, low smoke and ultra low black powder strategy. She asked why the issue had not been brought up when the case of fireworks was presented in Hong Kong. Mr John Lindsay said that the issues of air launch and other technologies had been discussed at the meeting with the Islands District Council on April 4. They had replied in their letter that they would continue to look for opportunities to improve the fireworks technology when better technology became available. In fact, they would consult relevant parties and departments on fireworks technology.

39. A Member asked whether the Tourism Commission was aware of the above development and whether the Commission had considered the issue of a contingency plan and concerns of the residents nearby. Miss Winky So said that the Commission was in the picture. They noted in the letter to the Islands District Council that the HKITP had given a detailed explanation about the air launch technology, a clear indication of the importance of compliance with environmental requirements as well as the commitment that they would consider alternatives which would help reduce the environmental impacts when the technology became available. For contingency measures, the purpose of the continuous monitoring as required in the EP was to monitor the ongoing impact to see whether there would be exceedance for appropriate actions to be taken. They did care for the community and that was the reason for the continuous monitoring. Mr John Lindsay added that a robust EM&A system would be in place for ongoing monitoring.

40. A Member considered that Mr John Lindsay was avoiding the question. The question was whether, if air pollution became particularly bad, Disney would, as responsible members of the Hong Kong community, consider toning down or even not running the firework shows for a couple of days until the air pollution problem became better. Mr John Lindsay said that at this stage, they did not anticipate this to be an issue and that was the reason for having ongoing monitoring. If this became an issue, they would have to go through the process outlined in the EM&A programme to evaluate and

implement whatever appropriate measures. They were in dialogue with EPD on the EM&A process.

41. The Chairman asked whether the presentation team had any additional information to provide. Mr John Lindsay said that they had tried to go further than the requirements by conducting monitoring for more nights and at more locations and putting in place redundant equipment. They had tried to provide information as far as possible within the time constraint.

(The presentation team left the meeting at this juncture.)

42. The Chairman said that the Council, at the last meeting, had taken the view that there were gaps in the monitoring results and the set of data as a whole did not instill total confidence of the Council. The project proponent came back to this meeting with not only data of one day but additional data of several days. He also highlighted that the purpose of the trial was not to try out all possible weather conditions as modeling had been done in the EIA report. Against this background, he considered that the crux of the matter should be for the Council to decide whether the monitoring results complied with the relevant environmental standards and satisfy Condition 3.1 of the EP. With the consent of all Members, the Chairman concluded that the Council accepted the results of the enhanced monitoring which showed that the 24-hour RSP and noise levels at all monitoring stations complied with the respective criteria.

43. As to the related broader issues, the Chairman recalled that the EM&A programme and air quality had been touched on. He said that the EM&A programme was a standard requirement in the EIA process in Hong Kong to ensure that ongoing monitoring would be conducted after the implementation of the project. As far as the fireworks displays were concerned, the Council had asked the project proponent to conduct EM&A for at least one year and report to the Council the actual air quality and noise data two months after the commencement of operation. This would give the Council more information under different weather conditions.

44. A Member said that it would be very hard for the RSP measurement to exceed the 24-hour AQO of  $180 \mu\text{g m}^{-3}$  by giving a 24-hour average figure which was as low as 20 to  $30 \mu\text{g m}^{-3}$ . It would not be very meaningful to reflect the impact of fireworks displays on the general air quality in the vicinity. In the last round of monitoring, the project proponent conducted real time monitoring which captured the plume of pollutants shortly after the displays. He considered this would be more indicative of the effect of the displays and more meaningful for future monitoring purposes. The Chairman pointed out that the RSP standard for the shortest timeframe in Hong Kong was on a 24-hour basis and the Member's concern was related to the issue of AQO in Hong Kong and whether there should be air quality criteria for a shorter timeframe in the long run.

45. Mr K K Kwok said that the project proponent had set up on-site monitoring locations in the monitoring programme in May to assess the on-site impacts. He wondered whether the Member was suggesting that on-site measurement should be conducted in the EM&A programme. The Member said that on-site monitoring would definitely be very useful in monitoring the overall picture of the impact on the environment. However, he did not expect the 24-hour average measurement to exceed the standard. On the other hand, he did not think it useful to have AQO for a very short timeframe which was also not available in other countries. It would be very easy for pollution sources such as roadside traffic to exceed it. While he was not so concerned about the short-term effect on workers' health as it would be minimal, he was more concerned about the long-term impact such as whether a high dioxin level in the immediate environment would result from the combustion of fireworks. He suggested conducting some baseline measurement within the park before the official opening and taking long-term measurement of some commonly-used metals like dioxin, copper, barium and strontium (say in the soil) to assess the long-term cumulative impact on the site.

46. Mr Elvis Au pointed out that the EIA process had to be fair and reasonable and should be based on the prevailing policy and standards. Policy issues should be dealt with in a separate context. He said that several toxic substances were prohibited from being used in fireworks under the EP. As shown in the last monitoring report, many of the measurements for the 17 types of metal were below the detectable limit as predicted in the EIA report. From a professional point of view, additional requirements on top of the EM&A manual could not be justified unless there were sufficient grounds in terms of the likelihood of significant adverse impact based on data gathered. The real time continuous measurement conducted in May was to characterize the emissions and it was not a normal practice adopted in monitoring programmes. The Chairman added that the EM&A manual had been submitted together with the EIA report endorsed in 2000. Unless there were very strong grounds, it would not be reasonable to impose additional requirements. A Member pointed out that continuous monitoring was not even required for major pollution sources such as power plants. Moreover, there were no standards against which the data collected were measured. He considered it costly and not so meaningful to conduct continuous monitoring.

47. The Chairman proposed to have a rigorous EM&A programme with flexibility to increase the frequency of monitoring in case the triggering levels were reached. As confirmed by Mr Elvis Au, the Chairman stressed that all monitoring data would be made known to the public at the website.

48. A Member considered that the data collected through continuous monitoring would be useful in assessing the impact of additional emissions loading of fireworks displays in terms of concentration. He understood that it would be difficult for the measurement to exceed the

standard but it would give some idea of the extent of the impact. Another Member asked if it was possible to collect air samples to assess the level of pollutants from the fireworks. The Member anticipated that such samples would be likely to reflect an insignificant level of pollutants as compared with those from power plants and vehicle emissions. The other Member, nevertheless, considered it useful to get information on the total loaded emissions of fireworks.

49. A Member understood the point raised by Mr Elvis Au that additional requirements imposed by a regulatory department had to be reasonable and meaningful. However, the Council could make recommendations and give advice. It would be up to the Government to consider whether the recommendations would be reasonable or meaningful; to decide whether to accept them or not; and how to implement them if accepted. He considered it prudent for the Council to recommend that continuous monitoring be conducted to assess the level of contamination for the benefit of the community.

50. A Member considered that the Council was not asking too much for continuous monitoring based on precautionary principles as the theme park might be expanding its operation in the future. Another Member supported the need to do something on monitoring so as to assess the contribution of the fireworks on air quality.

51. Mr K K Kwok explained that under the EIA Ordinance, the responsibility for monitoring the performance of the activities rested with the project proponents. They had to comply with the requirements set out in the EM&A programme and present the results to EPD. EPD would then act on and analyze the results.

52. The Chairman said that it was the Council's sentiment to recommend that continuous RSP monitoring be undertaken. A Member said that the purpose was to determine the relative contribution of the fireworks displays on the overall air quality on a short-term basis under different weather conditions. The monitoring did not need to be on a 24-hour basis measured by sophisticated equipment. The key was to catch the plume right after the fireworks and some form of portable particles counters could serve the purpose. The Chairman said that 24-hour RSP on filter paper was a standard method and TEOM was a reference method. Another Member considered that an emissions inventory could serve what the Member requested. He asked whether the proposed monitoring should be done on the site or near the sensitive receivers. The Chairman considered that it would be up to the authority to consider the appropriate approach and technical details, including locations. His initial inclination was to conduct the monitoring near the sensitive receivers, say at Discovery Bay.

53. A Member considered that it would be appropriate for the



Council to make the general comments that although the project proponent had complied with the prevailing standards, which he considered fairly lax given the state of air quality in Hong Kong, the Council should question the wisdom of the proposal for nightly firework shows since the scale of the shows would be about 10% to 12% of that of Victoria Harbour firework shows. This would be equivalent to about 52 Victoria Harbour firework shows a year. He was concerned about the impact of emissions loading in the context of the very poor air quality in Hong Kong.

54. The Chairman pointed out that there were provisions in the EM&A manual that adjustments to or even termination of fireworks would be considered in case of exceedance when it was shown that the exceedance was contributed by the fireworks displays.

55. On AQO, the Chairman considered that the issue of AQO should be revisited in the wider policy context. There would be a number of issues to be addressed, like PM 10, PM 2.5, 24-hour RSP and the need for a standard for a shorter timeframe. The Council would have to discuss the issue in a separate context.

56. The Chairman said that given the public concern of air quality in Hong Kong, both the Government as well as the private sector should pitch in for further improvement. Disney claimed in its website and Environmental Report that it was a corporation committed to the long-term development of Hong Kong and caring for the environment. It would not be unreasonable to encourage a global corporation like Disney to explore and consider other technology alternatives if it could be demonstrated that the alternatives could reduce environmental impact.

57. A Member proposed to ask the project proponent to pledge that they would consider terminating fireworks displays when the air quality got very bad. Another Member considered that this related to whether the fireworks displays were contributing to the poor air quality. The Council had to be fair to the project proponent and it had to be meaningful for the company to decide on changes to the shows.

58. The Chairman considered that with the rigorous EM&A programme and continuous monitoring suggested by the Council, further information would be collected on the extent of additional impact contributed by the fireworks displays. It would then be fair to ask for changes to firework shows if it was established that they were contributing to the pollution problem. A Member agreed and said that it required more long-term monitoring results, at least a year, to establish the real contributing factors.

59. The Chairman summarized the Council's views as follows -

- (a) the Council had looked at the results of the enhanced monitoring and was satisfied that the 24-hour RSP and noise levels at all monitoring stations complied with the respective criteria;
- (b) there should be a rigorous and flexible EM&A programme. The frequency of monitoring should be increased if the triggering levels were reached. There should also be continuous RSP monitoring. Contingency actions should be taken in the event of exceedance of the action levels, such as to adjust the fireworks programme (including termination);
- (c) the public were very concerned about the issue of air quality. Both the private sector and the Government should pitch in. The Council hoped that as a global corporation with commitment to care for the environment, Disney should consider other technology alternatives if it could be demonstrated that the alternatives could reduce environmental impact; and
- (d) the Council considered that the issue of AQO should be revisited in the wider policy context.

60. Mr K K Kwok agreed that the AQO was an issue at the policy level. An overall review of the existing AQO could be conducted to see whether it was sufficient and rigorous enough in meeting the present-day needs.

61. A Member said that she did not endorse the monitoring report because monitoring had been conducted only on one night and the data and findings were inconclusive.

(The Chairman left at this juncture due to some urgent commitments.)

**Agenda Item 4 : Proposed Mandatory Energy Efficiency Labelling Scheme**  
(ACE Paper 20/2005)

62. Mr Eric Chan briefed Members on the proposal. He said that the proposed mandatory energy efficiency labelling scheme for specified electric appliances in Hong Kong was part of the Government's ongoing efforts in promoting efficient use and conservation of energy. It was anticipated that the scheme would contribute positively to energy conservation, reduction of carbon dioxide emission and alleviation of air pollution. The Administration would take into account comments received during the consultation period before finalizing the implementation details.

63. A Member declared interest as a very small part of his business involved the sale of room coolers. In view of the relatively minor relationship between the said business and the proposal, the Acting Chairman suggested and Members agreed that the Member could participate in the discussion.

64. A Member supported the mandatory requirement for suppliers to display appropriate energy labels on their products. Given the wide range of models and product items, he was concerned that the requirement for suppliers to register the product models before supplying them to the local market might delay or affect normal business operations. He suggested that the responsibility should rest with the suppliers in that the suppliers should display accurate grading of labels on the products and provide accurate information on energy performance of the products. The enforcing agency could conduct random checks. The suppliers should be subject to heavy penalties if they failed to comply.

65. Mr Eric Chan said that some countries had adopted the approach proposed by the Member. However, the idea of prior registration was to assure the consumers that the gradings of the labels and energy performance information provided by the suppliers had been assessed by the enforcement agency. This would enhance consumers' confidence in the credibility of the energy labels, which was essential to the effectiveness of the scheme. Based on the experience of the voluntary scheme, approval could be given to the supplier within a relatively short period of time if adequate information was provided. It was envisaged that the registration requirement would not delay or affect normal business operations. Mr T P Uy added that the three types of products proposed to be covered in the first phase had been included in the voluntary scheme for many years and had high levels of participation in the scheme. Product models already registered under the voluntary scheme need not be re-tested under the mandatory scheme. Coupled with a one-year grace period, the trades would be able to adapt to the scheme.

66. The Member said that new models of electric products would emerge in the market from time to time and raw materials used in different product items even for the same model might be different. Moreover, Hong Kong was not just a consumer market. Products were re-exported through Hong Kong. It would be difficult to ensure that the re-exported products would meet the requirements. All these would increase the burden on the enforcement agency and time required for registration. Mr Eric Chan explained that only products for supply to the local market would be covered under the mandatory scheme. There was not much difference between the approach suggested by the Member and the proposed arrangement. Under the proposed arrangement, the suppliers would have to submit relevant product information, including test reports on the energy efficiency performance of the products, for registration. The registration would be based on the information provided. The main purpose of prior registration was to gain consumers'

confidence in the energy labels and thus offer an incentive for consumers to choose more energy-efficient products. Mr T P Uy added that instead of full-scale checks, the Electrical and Mechanical Services Department (EMSD) would conduct random checks to ensure that correct energy labels were displayed on the specified products covered by the mandatory scheme and valid information was provided in the labels.

67. A Member asked about how the energy efficiency of various products could be evaluated under a unified approach. Mr T P Uy explained that the energy performance of an individual product was assessed by measuring the output performance against the inputs. For example, the energy performance of a room cooler was evaluated by measuring its cooling capacity against its electricity consumption. The Member asked why an electric heater, which was a fairly popular domestic item with considerable power consumption, had not been included in the proposal. Mr Eric Chan explained that the current proposal was the first phase of the mandatory scheme. The three types of products had high market penetration rates under the existing voluntary scheme and thus the impact on the suppliers would be relatively small. The Government would review the results of the initial phase and consider extending the scheme to a wider scope of products in subsequent phases, taking into account the energy consumption reduction achievement and acceptance of the community and the trade.

68. A Member asked why the mandatory scheme was necessary for the three types of products given their high market penetration rates under the voluntary scheme. Mr Eric Chan explained that under the voluntary scheme, suppliers of the relatively less energy-efficient products were unwilling to register. By introducing the mandatory scheme, all product items had to display the labels. This would help drive out products with poor energy performance and encourage suppliers to supply more energy-efficient products in the long run. Moreover, the three types of products together accounted for more than 70% of the electricity consumption in the residential sector. It was estimated that substantial additional energy savings of 150 Gigawatt hours per year could be achieved.

69. The Member said that it might not be too cost-effective to implement the proposal covering only three types of products with high penetration rates as additional administrative costs would be incurred. He considered that the scope of the mandatory scheme at this stage should be broadened to cover more types of products especially those with low penetration rates under the voluntary scheme. Mr T P Uy explained that the implementation of the mandatory scheme for the three types of products had significant contribution to energy savings and was thus worth pursuing in the first phase. He further assured Members that it would be the initial phase but not the end of the mandatory scheme. The Government would consider widening the scope of products in subsequent phases. The Member considered that the high penetration rates of the three types of products

indicated that consumers' behaviour had been influenced to a certain extent. To achieve the benefits, he suggested the Government put more efforts in educational programmes so as to boost up public awareness and encourage consumers' buy-in behaviour for more energy-efficient products.

70. A Member supported the proposal and was glad that the Government was taking a very proactive step. She considered the proposal a demonstration of climate responsibility as the scheme could help reduce carbon dioxide emissions. As there was a general trend that new flats were provided with electric appliances by the developers, the Member recommended that the Government should encourage the developers to consider the energy efficiency performance of various products in their procurement process. She also hoped that the Government would organize educational programmes for major bulk purchasers, such as developers, large corporations, Government departments and schools, so that they could make better choices. Mr Eric Chan responded that the Government would consider requiring the developers to display labels on the electric appliances under the mandatory scheme in the new flats in the same way as in the consumer market. He agreed that the Government should organize more publicity activities to encourage the use of energy-efficient products.

71. A Member supported the proposal. She considered that energy labels were very helpful for consumers to identify the more energy-efficient products for residential or commercial use. It was also a very important educational process to enhance the understanding of consumers, especially youngsters, of what could contribute to energy saving and environmental improvement.

72. The Acting Chairman said that the proposal was only part of the overall energy efficiency campaign undertaken by EMSD upon the advice of the Energy Efficiency and Conservation Subcommittee under the Energy Advisory Committee. He considered that energy labelling was an essential part of the entire campaign to develop a credible system because consumers could make the right choice for more energy-efficient products. Pricing, however, was another important factor that might affect the consumers' decisions. A Member considered that although some consumers might not afford the fairly high price of the "grade 1" products (the most energy-efficient products) at this stage, the energy labelling was good for educational purposes. Another Member shared her view and considered that the Administration or relevant bodies such as the Energy Advisory Committee should involve the two power companies in demand-side management to see if they could contribute in some ways to encouraging the consumers to procure more energy-efficient products.

73. A Member supported the proposal and considered it important to make the labelling system a credible one. He asked whether the standards adopted for deciding the energy performance levels had been reviewed since

the launch of the voluntary scheme in 1995. Mr Eric Chan assured Members that as under the existing voluntary scheme, EMSD would periodically review the energy performance levels of products in the market and update them, if necessary, to reflect advancement in energy performance of the product category. The Member asked whether any quality control mechanism was in place to ensure the credibility of tests reports for energy efficiency performance produced by the suppliers. Mr T P Uy said that EMSD would accept test reports issued by laboratories which had been accredited by the Hong Kong Accreditation Service (HKAS) under the Hong Kong Laboratory Accreditation Scheme, or a scheme which HKAS had entered into a mutual recognition agreement. Among the accredited laboratories accepted by EMSD, most of them were outside Hong Kong such as in Japan or the Mainland.

74. A Member asked whether the Government had any plan to launch an energy efficiency programme for the commercial and industrial sectors, in particular for electric motors which accounted for more than 50% of the energy consumption. Mr T P Uy said that Mr Tsang had rightly pointed out that energy consumption of the commercial and industrial sectors (38% and 9% respectively) was higher than that of the residential sector (19%). He informed Members that EMSD had been implementing a wide-range of programmes to promote energy efficiency and conservation in different sectors. Examples included promoting the wider use of water-cooled air conditioning systems and issuing Building Energy Codes covering codes of practices for energy efficiency of lighting, air conditioning, electrical installation as well as lift and escalator installation. Although motors were not included in the energy efficiency labelling scheme, they were covered by the Building Energy Codes such as motors for air conditioning, lift and escalator systems. Moreover, there was a voluntary energy efficiency registration scheme for buildings in which a registration certificate would be issued to a building which successfully met the standards set out in the Building Energy Codes. The Member considered that as motors were the most basic components for mechanical and electrical systems, it would be helpful for engineers and designers to adopt the best practice if there was a labelling scheme indicating the energy efficiency gradings of motors. Mr Uy agreed to consider the suggestion.

75. The Acting Chairman concluded that the Council fully supported the proposal and would like to see the first phase to be implemented as soon as possible with a view to implementing the scheme for a wider scope of products. The Council considered that the scheme could increase public awareness on the importance of using energy-efficient products and would like to see more educational programmes on the promotion of efficient use and conservation of energy.

#### **Agenda Item 5 : Any Other Business**

Tentative items for discussion at the next meeting

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

**Agenda Item 6 : Date of Next Meeting**

77. The next meeting was scheduled for 12 September 2005.

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