Confirmed Minutes of the 139th Meeting of the Advisory Council on the Environment held on 12 February 2007 at 2:30 pm

Present:

Prof LAM Kin-che, SBS, JP (Chairman)
Prof WONG Yuk-shan, BBS, JP (Deputy Chairman)
Dr Dorothy CHAN, BBS
Mr James GRAHAM
Ms Betty HO
Prof Howard HUANG
Prof Paul LAM
Mr Edwin LAU
Ms Goretti LAU
Dr MAN Chi-sum, JP
Dr NG Cho-nam, BBS
Prof POON Chi-sun
Mr TSANG Kam-lam
Mr Eddie WONG
Mr Simon WONG
Prof WONG Tze-wai
Dr YAU Wing-kwong
Mr Esmond LEE, JP (Secretary)

Absent with Apologies:

Mr Markus SHAW

In Attendance:

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

In Attendance for Agenda Item 4 :

Mr Richard LANCASTER	Commercial Director, CLP Power HK Ltd. (CLP)
Mr John CULLEN	Project Director - LNG Project, CLP
Mr Ken MINER	Project Manager - LNG Project, CLP
Mr Richard MORSE	Head of Environmental Strategy & Development, CLP
Ms Daisy CHAN	Public Affairs Manager - Environmental Communications (Commercial Projects), CLP
Mr David HO	Technical Director, ExxonMobil Energy Ltd.
Ms Lee SKWIRZ	Senior Environmental Manager, ExxonMobil Energy Development Co.
Dr Andrew JACKSON	Managing Director, ERM-Hong Kong Ltd. (ERM)
Dr Robin KENNISH	Director, ERM
Mr Craig REID	Senior Consultant, ERM
Mr Elvis AU	Assistant Director (Environmental Assessment), EPD
Mr Eric CHAN	Assistant Director (Conservation), EPD
Dr WONG Fook-yee	Assistant Director (Country and Marine Parks), AFCD
Mr Cary HO	Senior Nature Conservation Officer (South), AFCD
Mr Joseph SHAM	Senior Marine Conservation Officer (West), AFCD
Dr Albert LEUNG	Senior Fisheries Officer (Management), AFCD
Mr WONG Sek-cheung	Chief Engineer/Gas Production and Supply, Electrical and Mechanical Services Department (EMSD)
Mr FUNG Kin-yi	Senior Engineer/Gas Systems 1, EMSD
Mr CHUNG Siu-man	General Manager/Planning, Development & Port Security, Marine Department
Mr WONG Kun Lun	Senior Marine Officer/Planning & Development (2), Marine Department
Ms Maggie CHIN	Senior Town Planner/Island(1), Planning Department

In Attendance for Agenda Item 5 :

Mr Raymond FAN	Deputy Director of Environmental Protection (2), EPD
Dr Malcolm BROOM	Assistant Director (Water policy), EPD
Mr KO Wing-hon	Assistant Director (Sewage Services), Drainage Services Department
Mr CHOW Wing-hang	Senior Administrative Officer (Water Policy), EPD

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Action

Agenda Item 1 : Confirmation of the Draft Minutes of the 138th Meeting held on 8 January 2007

The draft minutes were confirmed without amendment.

Agenda Item 2 : Matters Arising from the Minutes of the 138th Meeting held on 8 January 2007

Para. 19 Opening up of meetings

2. The Chairman informed Members that the Secretariat was gathering information on practices of similar advisory bodies in respect of opening up the meetings and enhancing transparency. A paper would be submitted to the Council for discussion at the March meeting.

Para. 47 Report by Council for Sustainable Development on air quality issue

3. The Chairman said that during the discussion on vehicular emissions at the last meeting, he suggested that the Council could consider the report prepared by the Council for Sustainable Development (SDC) on "Clean Air and Blue Skies – The Choice is Ours" to have a comprehensive view of the air quality issue. He informed Members that the SDC would roll out a public engagement programme in mid-2007 on the priority area of Better Air Quality (including congestion charging mechanisms, demand side management and actions to be taken during days with a high Air Pollution Index). He suggested and Members agreed that the Council could take the opportunity of the public engagement process to exchange views with the SDC's Support Group and relevant parties, with the report as the background to the air quality issue.

Para. 67 Visit to the landfill site

4. The Chairman informed Members that a visit to the Northeast New Territories (NENT) Landfill Extension and some of the nearby sites in the Frontier Closed Area had been scheduled for April 20. Members would be informed of the details nearer the time.

Action

Agenda Item 3 : Report (Part 1) on the 96th Environmental Impact Assessment Subcommittee Meeting
(ACE Paper 3/2007)

5. The Chairman said that Members attending the Environmental Impact Assessment (EIA) Subcommittee meeting on 19 January 2007 had declared their interests in connection with the two projects under agenda items 3 and 4. A Member declared that his company was involved in some tendering arrangements with the two local power companies and he had no direct interest related to the two projects under consideration. The Chairman suggested and Members agreed that the Member could continue to take part in the meeting.

6. The Chairman of the EIA Subcommittee briefed Members on the Subcommittee's recommendations on the EIA report on A Commercial Scale Wind Turbine Pilot Demonstration at Hei Ling Chau. The Subcommittee recommended that the report be endorsed without condition. The Subcommittee also made the following suggestions –

(a) the project proponent should take a more proactive role and provide resources to enhance the educational aspect of the project rather than purely rely on the Correctional Services Department's existing eco-tours; and

(b) the project proponent should explore the possibility of setting up on-site monitoring webcams at major works areas during the construction phase subject to the outcome of the negotiation with the Correctional Services Department and Environmental Protection Department (EPD) on security considerations.

7. A Member enquired about the time required for construction and serviceable period of the wind turbine. The Chairman suggested that the question could be addressed by the project proponent team when they joined the meeting for agenda item 4.

8. The meeting endorsed the recommendations and suggestions of the EIA Subcommittee.

Action

Agenda Item 4 : Report (Part 2) on the 96th Environmental Impact Assessment Subcommittee Meeting
(ACE Paper 4/2007)

9. The Chairman said that the EIA Subcommittee examined the EIA report on Liquefied Natural Gas (LNG) Receiving Terminal and Associated Facilities in detail and recommended that some outstanding issues and concerns be further discussed by the full Council. Since then, the project proponent had provided additional information as set out in Annexes D and E to the paper. To facilitate further consideration of the EIA report, the Council had invited the project proponent team and representatives from relevant Government departments to attend the meeting.

10. The Chairman said that public comments received by the EPD after the Subcommittee meeting had been circulated to Members for reference before the meeting in batches. Members might wish to note the large number of public comments received but most of them were in the form of a standard letter. Separately, some public comments directly addressed or copied to the Council after the Subcommittee meeting had also been circulated to Members for information before the meeting. The meeting agreed that the comments should be for the EPD to consider.

11. The Chairman said that a Member could not attend the meeting and would like to table a set of comments from the World Wide Fund For Nature Hong Kong which also represented his views. Separately, a set of responses from the project proponent and a Government department to some questions raised on the EIA report was also tabled for Members' information.

12. Chairman of the EIA Subcommittee briefed Members on the gist of the discussion at the Subcommittee meeting, outstanding issues and concerns as well as comments and suggestions on the EIA report. He highlighted that Subcommittee Members agreed that it was important to examine the EIA report in the context of the EIA Ordinance and make reference to precedent cases.

13. The Chairman agreed to the Subcommittee's views that the Council's role was to consider whether the EIA report was environmentally acceptable within the framework of the EIA Ordinance. The project was a

complex one covering different policy areas, including energy policy, economic considerations, land use and town planning. Issues falling outside the remit of the EIA Ordinance, including the need and justifications for the project, alternative sources of supply outside Hong Kong and land use interface, had to be dealt with by relevant policy bureaux and boards. He suggested and Members agreed that the discussion should focus on the outstanding issues and concerns as well as follow-up or new queries and concerns on the EIA report.

14. A Member said that while land use compatibility was a planning issue, landscape compatibility was within the remit of the EIA Ordinance. As shown in Table 11.30 and 11.34 of the EIA report, some of the landscape impacts were rated moderate to significant after mitigation measures were taken. However, the project proponent claimed that there was no unacceptable landscape impact.

15. Mr Elvis Au said that under the EIA Ordinance, EPD had the duty to examine the report from different technical points of view by consulting relevant authorities before the report was considered suitable for public inspection. The Planning Department and EPD conducted a technical review on the landscape and visual impacts based on the Study Brief and Technical Memorandum on EIA process (TM). The methodology and approach adopted in the EIA report was in line with the practice used in other EIA reports as well as the criteria and guidelines laid down in the TM. The objective of the EIA process was to determine the overall environmental acceptability of the impacts from a holistic view rather than in a piecemeal manner. The project proponent and the authorities had to go through a due process in assessing the residual impacts, including the context, magnitude and consequences, in accordance with the guidelines laid down in the TM.

16. Mr P Y Tam said that it would be inevitable that any type of development would have a certain degree of landscape and visual impacts. In assessing the landscape and visual impacts, it would be important to balance the overall residual impacts of a project. He referred to Table 11.35 of the EIA report which showed a matrix of the residual landscape and visual impacts of the project. The Planning Department considered that the project proponent had gone through the due process and, on balance, the landscape and visual impacts after taking the proposed mitigation measures were acceptable in complying with the EIA Ordinance and TM.

17. A Member said that the South Lantau and Soko Islands were proposed as conservation areas under the South West New Territories (SWNT) Development Strategy Review and enquired whether there was a change to the plan after the LNG proposal came into scene. Ms Maggie Chin explained that the SWNT Development Strategy Review was conducted in 2001 and the LNG proposal had not come into scene. Since the project proponent had conducted an EIA for the project and gone through a proper site selection process, the Planning Department would assess the acceptability of the project from the perspective of landscape and visual impacts in the context of the EIA process.

18. A Member agreed that any development would have a certain degree of irreversible impacts and it was important to assess the impacts in a more comprehensive manner. He considered that the visual impacts to sensitive receivers would be more important than the landscape impacts.

19. A Member expressed concern about the LNG terminal facilities on the South Soko which would be hazardous installations deterring visitors from visiting the island for recreational and research purposes. A Member considered that the issue of hazard to life had to be put into context and the worry was similar to that about the installation of natural gas heaters at home. The Chairman suggested that Members could ask the project proponent team their follow-up questions on landscape and visual impacts as well as hazard to life.

(The project proponent team joined the meeting at this juncture.)

20. The Chairman informed the project proponent team that there was an outstanding question on the EIA report on A Commercial Scale Wind Turbine Pilot Demonstration at Hei Ling Chau and would like the team to address the question before starting the discussion on the LNG terminal project. On a Member's enquiry about the time required for construction and serviceable life of the wind turbine, Mr Richard Lancaster said that the lead time for procuring the wind turbine would be about nine months to one year and the engineering and detailed design process would be carried out in parallel. The overall programme for construction would take a further six months. The wind turbine would be a long-term asset with an expected serviceable life of 20 years.

21. The Chairman said that the discussion on the LNG terminal project would focus on outstanding issues and concerns after the Subcommittee meeting as well as follow-up and new issues and concerns raised by Members.

22. Dr Robin Kennish briefed Members on the outstanding issues of the Subcommittee, including the cooling water system and impacts to marine life, in particular underwater sound, and the assessment criteria for heavy metals in water. He also briefed Members on the supplementary information provided before the meeting, including emission reduction benefits of the LNG terminal project, visual montages and the Enhancement Plan at South Soko. Mr Richard Lancaster showed Members some information gathered during their recent visit to the Dominion Cove Point LNG Terminal in the US, including meetings with the terminal operator and conservation groups.

23. The Chairman suggested that the discussion start with the two outstanding issues on the cooling water system and assessment criteria for heavy metals in water. Having regard to the supplementary information given on the noise impacts of the outflow of the cooling water system, Members did not have any follow up questions on the issue. In respect of the cooling water system, the Chairman said that a Member, who could not attend the meeting, had expressed doubts on whether the temperature deviation of 2 degrees Celsius at the boundary of the mixing zone would be achievable.

24. Dr Robin Kennish said that there was a high degree of confidence that it would be achievable. The calibrated and validated models used were widely adopted in other EIA studies, approved by EPD and the predictions were considered accurate. Upon the Chairman's enquiry, Mr Elvis Au confirmed that the temperature variation of 2 degrees Celsius, which was the Water Quality Objective (WQOs), was met at the boundary of the mixing zone. He highlighted that it was not necessary to meet the WQOs within the mixing zone and the boundary of 200 m from the discharge point in this case was comparatively smaller than in other EIA studies.

25. In reply to a Member's enquiry, Dr Robin Kennish explained that the temperature difference from ambient of -12.5 degrees Celsius referred to the maximum temperature decrease of effluent leaving the vaporizing unit under a conservative scenario and the temperature change would likely be

lower at different times of the year depending on the season and the throughput of the facility. The cooling of the water did not take place at the open water culvert but inside the LNG terminal vaporization system. The temperature difference of 2 degrees Celsius referred to the temperature of marine water at the boundary of the mixing zone.

26. A Member enquired about the range of water depth under the tidal fluctuation situation in the modelling. Dr Robin Kennish said that the typical water depth at the discharge area was about -6 to -10 mPD. The modelling was based on an overall complete spring-neap tidal cycle which had taken into account wind and tidal energy mixing and sea bed current velocity at different times of the year. The modelling result did not show any stratification and the details were elaborated in Section 6 of the EIA report (Part 2).

27. The Chairman said that as the project proponent had confidence to achieve the objective of a temperature difference of 2 degrees Celsius in marine water at the boundary of the mixing zone, the requirement could be stipulated as a condition in the Environmental Permit (EP) to ensure that the objective could be met, if the EIA report was endorsed. Mr Elvis Au said that the requirement could be incorporated into the environmental monitoring and auditing (EM&A) programme to ensure that the requirement was met.

28. The Chairman said that there were doubts expressed by a Member and some members of the public on whether the chlorine concentration of 0.3mg/l at the discharge point and 0.01 mg/l at 300 m from the outflow point near the coral area would be achievable. Upon his enquiry, Mr Elvis Au confirmed that the chlorine concentration met the WQOs and the standard was also adopted in other EIA studies. The Chairman suggested and Members agreed that the requirement would be stipulated as a condition in the EP, if the EIA report was endorsed.

29. The Chairman said that a Member had also expressed concern about the impacts of the cooling water system on the fisheries spawning grounds. Dr Robin Kennish said that a detailed review and a nine-month detailed sampling of larval fishes had been carried out as they were aware that the southern Hong Kong waters had been previously identified as a spawning and nursery ground for commercial fisheries resources. The survey and modelling results showed that there were no significant differences in the

distribution of larval fish and fish egg density between the South Soko sampling stations (including at the location of the intake point), the identified sensitive spawning and nursery grounds of southern Hong Kong waters and the non-spawning and nursery grounds of Western Lantau. It was concluded that the impacts of the cooling water system on the fisheries resources would not be significant.

30. Dr Albert Leung said the scale of the cooling water system was not particularly large and the project site was not particularly special in terms of fish spawning and nursery areas and it was a relatively small area in the southern spawning and nursery ground in Hong Kong. Having regard to the high fertilization rate of fish eggs in spawning seasons and the high natural mortality rate of fish larvae in the marine environment, the impact of the cooling water system on the fisheries resources was not considered to be significant.

31. On the issue of heavy metals in waters, Dr Andrew Jackson highlighted that the modelling results showed that any increase in suspended solid concentrations would be extremely localized and short-term as a result of the dredging works. Over 99% of the metals would not dissolve in marine waters and thus the impacts to biota would not be significant. In reply to another Member's enquiry about the reason for focusing on copper in the supplementary information, a Member explained that he found that the elutriate test results showed that the copper concentration was a bit high and thus he raised the matter at the Subcommittee meeting.

32. A Member noted the supplementary information provided and asked about the original copper concentration before the elutriate test. Dr Andrew Jackson said that the normal variation of copper in Hong Kong waters was from 1 to 5 mg/l. In the elutriate test, the sea water was taken together with the sediment sample. There was no evidence from the test results to suggest that there was desorption of copper from the sediment into the sea water and the copper concentration after the test remained within the normal range. They had also conducted additional conservative calculations assuming that the highest level of copper in sediment dissolved fully into the water, however, the result showed that the incremental increase was below the assessment criteria. He highlighted that the assessment criteria were based on long-term exposure but the impacts arising from dredging works would be short-term and localized. There was a high degree of confidence that the

impacts to marine ecology and fisheries due to the release of metals, including copper, from marine sediments were insignificant. The Member commented that the copper concentration in the ambient water environment already exceeded some of the standards which was a long-term problem in Hong Kong waters and should not be attributed to the proposed works. Dr Jackson said that elevated concentrations of metals in marine sediments were a function of several factors, including a natural phenomenon in south western Hong Kong waters.

33. A Member expressed concern about the installation of the hazardous facilities on South Soko which would deprive the public of the opportunity to go to the island for recreational and research activities. Mr Wong Sek-cheung said that there was a difference between safety and risk. If the terminal was not safe, it would not be allowed to be constructed under relevant ordinances. In terms of risk, the project was assessed according to a set of stringent risk guidelines. The maximum individual off-site risk outside the boundary of the terminal site would not exceed one in 100,000 per year in terms of predicted increase in the chance of death per year. For a visitor to the island, the level of risk would be lower than the maximum off-site risk taking into account the duration of visit. Such level of risk was also much lower than that of a traffic accident which was about one in 10,000 per year.

34. A Member said that natural gas was much lighter than air and it was not easy to have an explosion as the natural gas would rise in the unlikely event of a gas leakage. Dr Andrew Jackson said the individual risk criterion was met within the boundary of the site and people outside the boundary would not be exposed to a level of unacceptable risk as defined by the Government's risk criteria.

35. Upon the Chairman's enquiry about the proposed location of the resource centre and related facilities under the Enhancement Plan, Mr Richard Lancaster said the LNG terminal facilities would only occupy about 25% of the island and there was an abundant area for siting the centre and related facilities. They would discuss with stakeholders an optimum location.

36. A Member said that his concern was related to the potential risk as shown in a fatal incident a few years ago resulting from an explosion at one of the power plants. Mr Richard Lancaster said that the fatal incident was related to hydrogen which had a much wider range of combustibility of 4 to

76% while that of methane was about 5 to 10%. Moreover, the accident was a localized one involving two engineers working right up the equipment inside the terminal area. By taking into account the risk contours and related factors, the LNG terminal facility would be carefully designed to minimize risk and avoid accidents of a similar nature.

37. A Member enquired about the safety boundary in relation to the planned marine park. Mr David Ho said that the safety of visitors as well as operators was their top concern, especially under the co-location of the LNG terminal facilities and a marine park. As stated in the Enhancement Plan, the tours to the island would be structured to ensure they could be carried out safely. They would work with relevant parties to draw up a boundary line of restricted area which could not be visited by visitors. Warning signs would be posted where necessary. Mr Richard Lancaster added that it was common to have a security exclusion zone around the LNG terminal for security rather than safety reasons. They would work closely with relevant authorities and stakeholders to develop plans for managing vessels in the area.

38. A Member suggested that a prohibited zone be drawn near the inlet and outflow area of the cooling water system to ensure safety, in particular the outflow area which was usually a favourable fishing area. Mr David Ho said that with the experience of other power plants, the inlet and outflow points would be far away from the beach line areas and there would be sufficient warning signs to mark the underwater structures.

39. Members noted the visual montages of the LNG terminal facilities provided by the project proponent which included the far and close views. A Member said that unlike other parameters which had clear standards, there were no clear standards to measure landscape and visual impacts. He asked about the possibility of having some innovative ideas in integrating the tanks with the landscape and future marine park, such as by submerging part of the structures underground or having some structures conceal the tanks to make them less intrusive.

40. Dr Robin Kennish explained that the layout design had been changed to strike the best balance in reducing the extent of reclamation, terrestrial habitats being affected and visual impacts of the tanks. From the far field viewpoints, the topography of the island had been used to screen the tanks as far as possible. On the micro level, many specific landscape

measures had been employed to integrate the structures with the environment, such as bench planting and reducing the tank height. He highlighted that they had to take into account specific risk guidelines and other aspects of the EIA Ordinance such as the amount of waste generated.

41. Mr Ken Miner said that there were examples of underground tanks in Japan, Taiwan and Korea which were mainly used in seismically active areas and there were significant disadvantages of underground structures. The key concern was the additional excavation of 800,000 m^3 to 1 million m^3 which would have significant impacts on waste generation and would require two more years in the construction period. To ensure that the surrounding rocks would not be frozen, it was necessary to have heaters at the bottom and around the tanks which would require a huge amount of additional energy generation during operation. For a 25-year life period, 66,000 tones of additional natural gas had to be burnt which would have significant environmental impacts. Overseas experience with existing underground tanks showed that there were more operational problems such as difficulties in detecting the sources of leakage.

42. A Member considered that the proposal of submerging part of the tanks underground or putting structures to conceal the tanks would create much more noise and require a much longer construction period. It would need benching of the hillside to provide more land area and he anticipated that the resulting structures would look more intrusive. Professional advice on landscaping and vegetation would be useful to making the structures less intrusive.

43. A Member considered that having considered the emission reduction benefits of LNG for power generation, the timely construction of the terminal facilities was crucial. In view of the relatively large scale of the project, there would be inevitable landscape impacts.

44. A Member enquired about the possibility of using some artistic approach such as painting and colouring to integrate the structures with the landscape. Chairman of the EIA Subcommittee recalled that Council members were very impressed by the artistic and aesthetic design of the waste treatment plants and incinerators which blended into the landscape during their previous visit to West Europe. The Chairman shared the views that an innovative and creative approach in design could be adopted.

45. A Member said that according to the TM, the project proponent was required to provide an insight into the future of the area affected and the ways the project could fit into the wider environment. He enquired whether the project proponent had taken into account that Soko Islands was a planned marine park for recreational activities when considering the landscape mapping.

46. Dr Robin Kennish said that as part of the EIA requirement, they had conducted a full landscape and visual impact assessment according to the requirement of the TM. In conducting the landscape mapping of the island, they had taken into account the landscape character and overall changes of the island in the past. Unlike many outlying islands, South Soko was not an undisturbed island and it had gone through widespread landscape changes since the 60s. Against this background, they had conducted a full mapping and impact assessment based on the landscape resources and character. The layout design had tried to reduce the overall scale of the development, extent of reclamation and prominence of the structures by taking into account the engineering considerations and stakeholders' views. The footprint had been reduced from 40 ha to a construction footprint of approximately 19 ha. A package of mitigation measures had been proposed in reducing the landscape character impacts. The overall landscape and visual impacts were considered acceptable with the mitigation measures in place.

47. In reply to the Chairman's enquiry about the possibility of making the facilities less visually intrusive, Mr Richard Lancaster said that while they had looked into a number of ways such as submerging part of the tanks underground (but with environmental consequences), they would take forward Members' suggestions and provide more details in a landscape master plan to address Members' concerns.

48. A Member enquired about the assessment of ecological value of the sandy beaches and rocky shores. Dr Robin Kennish explained that the main part of sandy beaches affected would be about 35 m at Sai Wan. The beach was assessed to have a low ecological value as there were a lot of works at the back of the beach during the construction of the detention centre. The beaches at Pak Tso Wan and Tung Wan were of a higher ecological value and there would be no encroachment upon these beaches. The rocky shores affected would be about 265 m mainly at Tung Wan for raising the shore level

for the jetty. The shore would be replaced by boulders after the works and only a small part of the shore would be impeded underneath the jetty.

49. In reply to the Chairman's enquiry about the plan of designating Soko Islands as a marine park, Ms Anissa Wong said that it remained the Government's intention to pursue the designation of the Soko Islands as a marine park. The proposal would be taken forward as soon as the resources allocation issue was resolved.

50. On the Enhancement Plan, the Chairman said that there were some concerns about whether the proposed artificial reefs could work in the Hong Kong waters. Dr Albert Leung considered that whether the artificial reefs would function depended very much on how they were managed. Dr Robin Kennish explained that during the baseline and geophysical surveys along the alignment of submarine utilities and around the proposed marine park, they noticed that the sea bed was relatively disturbed and they considered that there was an opportunity to rehabilitate the area by deploying artificial reefs. The idea of deploying artificial reefs was not new and the western Soko was one of the sites that the Agriculture, Fisheries and Conservation Department (AFCD) had short-listed for deployment studies of artificial reefs. A feasibility study would be conducted to examine whether the marine environment would be suitable for the deployment of artificial reefs.

51. Mr Richard Lancaster said that the Enhancement Plan outlined a number of enhancement initiatives and improvements after taking into account the stakeholders' views. The cost estimation for the Enhancement Plan was about $100 million and over half of the resources would be for the marine enhancement programmes. They would establish a Scientific and Educational Advisory Committee and work with stakeholders on how the resources could be best allocated and how to take forward the initiatives. The Chairman considered that the enhancement initiatives would be value added to the planned marine park. A Member welcomed the commitment from the project proponent as he considered sufficient resources would be required for the education aspect of the Enhancement Plan.

52. Upon the Chairman's enquiry about the survey of marine mammals, Mr Richard Lancaster confirmed that the surveys would be conducted following accepted protocols and specified time periods during the pre-construction, construction and operational phases to provide longer-term

data on the marine mammals.
(The project proponent team left the meeting at this juncture.)

53. The Chairman reminded Members that the Council's duty was to examine the EIA report carefully within the framework of the EIA Ordinance and the remit of the Council. The Chairman went through a line of inquiry on key issues with Members and the view were summarized as follows –

(a) Use of LNG – Members agreed that LNG was a cleaner fuel for power generation with less emission.
(b) Need and justifications
(c) Need for new LNG facility
(d) Why not set up facility in China
(e) Alternative sites – Members agreed to the Subcommittee's view that the project proponent had gone through a proper site selection process.
(f) Black Point vs South Soko – Members agreed to the Subcommittee's view that the Black Point option should be ruled out due to risk concerns.
(g) Size and scale of facility and jetty – the project proponent had provided supplementary information in response to the queries.
(h) Land use compatibility
(i) Landscape and visual impacts
(j) Water quality impacts
(k) Environmental Enhancement Plan

54. On items (b) to (d), Members agreed that while these were reasonable questions to be asked, they were not within the remit of the Council and should be considered by the relevant bureaux or advisory bodies. The starting point was that if there were a need for the project, whether the EIA report was considered environmentally acceptable.

55. On the land use compatibility issue under item (h), Mr P Y Tam advised Members that should the policy directive for an LNG terminal in Hong Kong be given, the Planning Department would proceed to prepare an Outline Zoning Plan (OZP) covering the island. When the Town Planning Board (TPB) considered the draft new plan, the environmental issue was one of the considerations and it was important that the Council gave due consideration to the project at this stage and advise whether the EIA report for

South Soko was considered acceptable.

56. A Member enquired whether there would be a time gap between the preparation of the OZP for the island and approval of the EIA report. Ms Maggie Chin explained that the EIA process dealt with the environmental aspect of the project. Under the planning process, the Planning Department would make a preliminary submission to the TPB, for the purpose of getting the TPB's agreement to invite views from the public including the relevant District Council on the draft OZP. Under the Town Planning Ordinance, the draft OZP was required to be published for public inspection for a statutory period of two months. Mr Elvis Au confirmed that the approval of the EIA report did not mean that the works for the project could immediately start. The decisions under the EIA Ordinance would not be binding on the TPB. The project proponent still had to go through the required statutory and administrative procedures, including the town planning process, Foreshore and Seabed Ordinance and the land grant process.

57. A Member considered that the purpose of the project was to accelerate the use of LNG to achieve the emission reduction targets. The time factor was important as the quicker the project proponent could increase the portion of LNG in the fuel mix, the quicker the emission reduction targets could be achieved.

58. On the landscape and visual impact under item (i), a Member considered that it was common that the ultimate appearance of the structures in a project would be different from what was shown in the montages in the planning stage. It would be important for the relevant authorities to take care of the Council's concern. A Member considered that it would be necessary for the project proponent to reduce the island landscape impact from the significant level to the moderate level as the number of visitors to the island would increase after the designation of the site as a marine park.

59. A Member considered that it was necessary to view the issue in perspective, such as by comparing the visual impacts of the industrial facilities on the large number of sensitive receivers in Tsing Yi and Kwai Chung. The number of sensitive receivers for the LNG terminal facility on a remote island would be much smaller. Moreover, he noticed from the public comments that not all of them were against the South Soko option, and many of them supported the South Soko option. Chairman of the EIA Subcommittee hoped

that undesirable landscape and visual impacts of the new development could be avoided by improving the design. Another Member considered that there were design experts in the field who could come up with some aesthetic design for the structures.

60. The Chairman suggested and Members agreed that the project proponent would be required to work out a detailed landscape master plan taking into account Members' views and considering that the facilities would be in the middle of a marine park. Chairman of the EIA Subcommittee suggested that the landscape master plan be submitted to the Environmental Monitoring Committee for consultation before being submitted to the EPD for approval.

61. On water quality impacts under item (j), the Chairman suggested and Members agreed to stipulate the requirements, particularly those on residual chlorine and temperature, as conditions in the EP. Mr Elvis Au said that under the EP, it was common to have a stringent EM&A programme to require the project proponents to verify the predictions and the effectiveness of measures. There were mechanisms to enforce the requirements under the existing pollution control ordinances or, if the conditions could not be imposed under the existing pollution control ordinances, under the EP issued under the EIA Ordinance. A Member asked about the control mechanism during the construction phase. Mr Au said that there was an action plan as part of the EM&A programme for actions to be taken when the action level or the limit level was exceeded. The project proponent might be required to stop any construction activities as the last resort if the limit level was exceeded.

62. Two Members expressed concern about the credibility of the monitoring team employed by the contractors. Mr Elvis Au explained that there was a stringent system requiring two layers of monitoring and auditing checks with an environmental monitoring team and an independent auditing team. Their reports had to be made available to the public and submitted to the EPD for vetting. On top of that, the EPD would conduct spot checks. The proposed Environmental Monitoring Committee would perform an independent role in the monitoring work.

63. A Member was concerned about the cumulative impacts of future projects in Southern Lantau on the dolphins. He wondered whether the Council could obtain impartial views of dolphin experts for future projects as

he noticed that the experts employed by the project proponent were also the consultants of the AFCD. Dr Wong Fook-yee said that while the AFCD commissioned consultants for dolphin monitoring works, the department also performed their own monitoring works and quality control. The number of experts available in the field was very limited. Chairman of the EIA Subcommittee considered that it was important to ensure that there would be no residual impacts arising from individual projects and it followed that there should be no cumulative impacts. The Chairman said that the project proponent had undertaken to carry out biodiversity surveys on marine mammals during the pre-construction, construction and operational phases.

64. On the Environmental Enhancement Plan under item (k), a Member considered that it was important that relevant authorities and the project proponent had confirmed that the public would not lose a marine park due to the project and it might even be a better one with the enhancement initiatives in place.

65. On whether the EIA report should be endorsed, the Chairman highlighted that the Council's role was to consider the environmental acceptability of the EIA report but not the need for the project. A Member moved that the EIA report be endorsed. Another Member supported. Two Members endorsed both the EIA report as well as the project subject to the conditions proposed by the Council. A Member considered it necessary to make clear that the Council's endorsement did not include the endorsement of the need for the project. Another Member considered that there was no need to state this. A Member considered that it would be clearer to spell this out as the need for the project related to other considerations, such as energy policy and economic considerations. After discussion, Members agreed that the endorsement should be confined to the environmental impact of the project.

66. The Chairman concluded that the Council endorsed the EIA report insofar as the environmental impact of the project was concerned, with the following conditions –

(a) an Environmental Monitoring Committee be set up, including representatives of concerned groups, stakeholders, experts and Members of the ACE;

(b) the water quality impact particularly with respect to residual

chlorine and temperature be closely monitored at and around the discharge point of the cooling water system; and any exceedance be immediately reported to the EPD and the Environmental Monitoring Committee;

(c) an Environmental Management System be put in place on top of the Environmental Monitoring and Audit Programme submitted by the project proponent;

(d) sufficient resources be provided by the project proponent to implement the Environmental Enhancement Plan;

(e) a Scientific and Educational Advisory Committee be established under the Environmental Enhancement Plan; and

(f) a landscape master plan be submitted to the Environmental Monitoring Committee for consultation before being submitted to the Director of Environmental Protection for approval.

Agenda Item 5 : Proposal for applying the polluter-pays principle in the provision of sewage services and progress update on Harbour Area Treatment Scheme Stage 2A
(ACE Paper 5/2007)

67. A Member declared interest that he was a consultant to the environmental impact assessment on the advance disinfection facilities. His involvement was not directly associated with the proposal in respect of polluter-pays principle. Another Member declared interest that he was the president of the Hong Kong Federation of the Restaurants and Related Trades. The Chairman suggested and Members agreed that the two Members could continue to take part in the discussion at the meeting.

68. Dr Malcolm Broom briefed Members on the Government's proposal for applying the polluter-pays principle in the provision of sewage services and reported the progress of the preparations for proceeding with the Harbour Area Treatment Scheme (HATS) Stage 2A.

69. In response to a Member's question on whether there was a timetable for implementing Stage 2B, Dr Malcolm Broom said that a review of

the timing was planned for 2010/11. The Government would examine the actual environmental need for determining the timing by looking into a number of factors including the population growth rate, the increase in sewage flow and the water quality trend at the time of the review.

70. Given that the restaurant trade was bearing about 85% of the total Trade Effluent Surcharge (TES) and the Government had collected the figures on the restaurant trade, A Member urged the Government to complete the TES surveys within six months instead of twelve months as set out in the proposal, or alternatively to implement the adjustment of the generic COD and TES rate for restaurants first, without waiting for completion of the surveys for the other trades. Dr Malcolm Broom explained that the cost structure of the existing sewage services charging scheme included costs allocated to Sewage Charge (SC) and TES respectively. The review of the TES element had to take into account of the survey results of all the 30 TES trades for assessing the costs to be allocated to the 30 trades. It could not be conducted in an incremental or trade-by-trade manner. He highlighted that the surveys for the other 29 TES trades had begun. As there were about about 16,000 dischargers subject to the TES, the work would be substantial. The twelve-month period was the best estimate on the lead time required for the process.

71. Ms Anissa Wong added that the Administration had considered very carefully the request for early implementation of the adjustment of the generic COD for the restaurant trade raised by the Member and other representatives of the trade. However, with a view to maintaining the integrity of the overall system, the Administration could not single out one particular trade and impose a different and separate treatment on the remaining 29 trades. The twelve-month period was the shortest estimated timeframe to collect reasonable and reliable survey findings. Nevertheless, the Government would try to complete the surveys within twelve months and come up with a recommendation on the adjustments to be applied to the TES rates for the 30 trades.

72. A Member considered from a consumer perspective that the restaurant trade was indeed facing a crisis due to increases in different operating costs such as rentals and salaries, etc. Speeding up the process of the TES surveys would help sustain the trade's survival. Mr Raymond Fan pointed out that the Administration only had the indicative figures on the

generic value of Chemical Oxygen Demand (COD), the measure of pollution load under the TES, for the restaurant trade but not the survey findings of all the 30 trades required for the overall review of the TES. The Administration would only be able to come up with the unit TES rate for an individual trade after the completion of the whole TES survey exercise for all the 30 trades. He emphasized that the Administration was in close liaison with the restaurant trade and had been taking into account their views very carefully. The increase in SC would only be a very small percentage of the overall operating cost of the restaurant trade. The Administration would make sure that the proposed increase in charges would not impose undue pressure on the restaurant trade. In the interim before the completion of the TES surveys, efforts were made to help the restaurant trade by making the appeal system for reassessment of the TES rate more affordable. It was recommended that the validity period of reassessment be extended from one year to two years and, for small restaurants, that the sampling requirement be reduced from three days to two days. Subject to the support of the Legislative Council on the relevant subsidiary legislation, the Government aimed at implementing these interim measures in the middle of this year.

73. As an economist, a Member commented that there was no justification for giving preferential treatment to an individual trade. Taking into account that there would very likely be a trend of a substantial increase in the inflation rate in Hong Kong, he considered that the proposed increase in SC by 9.3% annually for the next ten years would indeed be nominal and an increase in a more aggressive manner could be considered.

74. Based on the Administration's explanation, the Chairman noted the need for conducting the TES surveys for all the 30 trades in a whole package. While understanding the difficulty in squeezing the lead time from twelve months to six months, he hoped the Administration would take note of Members' clear sentiments and do as much as possible to expedite the process.

75. A Member supported the polluter-pays principle as recommended in the proposal. He said that about 70% of sewage in Hong Kong was treated by chemically-enhanced primary treatment (CEPT). Instead of COD, the cost of treatment by CEPT was more importantly affected by suspended solids as well as oil and grease. He wondered why these two elements were not included as alternative pollution load for TES assessment. In reply, Dr Malcolm Broom pointed out that the method of calculating TES

had been reviewed and debated extensively. People had suggested alternative parameters which might be included in the assessment but none could be seen to have a clear advantage. COD was essentially a proxy variable which could be used to help partition the costs of treatment according to the polluting load. As it was simple to use, and as the use of other variables offered no clear advantage, the Administration would like to maintain the status quo so as to keep the basis of TES assessment as straightforward as possible.

76. In response to a Member's enquiry on how the costs of sewage treatment were allocated to SC and TES, Mr Ko Wing-hon said that the issue was quite complicated. All processes including sewage collection and treatment were split into those related to flow for allocating the cost to SC and those related to treatment or pollution load for allocating the cost to both SC and TES. The split of costs between SC and TES was 76% and 24 % respectively for sewage treatment and the split between load and flow related components was 70% and 30% respectively for the maintenance of sewage collection systems. After completing the surveys on the 30 TES trades, the generic COD value for each trade would be adjusted if necessary. Such change would eventually affect the split of costs for SC and TES. In reply to the Member's question, Mr Ko said that the split between sewage flow and pollution load for assessing the SC and TES respectively would be covered in the review.

77. The Chairman concluded that the Council was supportive of the proposal, in particular the polluter-pays principle.

Agenda Item 6 : Any Other Business

Information on emissions from power plants and energy related issues

78. A Member enquired whether the Administration could provide some information about the energy infrastructure, including the development of power plants and associated network, as she was concerned about the cumulative impacts of the energy infrastructure on the environment. Ms Anissa Wong said that on the environmental impacts of power plants, EPD maintained an inventory of emissions from existing power plants for monitoring purposes. On the infrastructure of new power plants, the EPD was not aware of any development of new power plants in the pipeline except for the LNG terminal project discussed by the Council and power companies

were not allowed to build new coal-fired power plants in the future.

79. The Chairman said that the opportunity could also be taken to update the Council on Hong Kong's efforts in reducing greenhouse gas emissions. A Member would also like to have some information on the long-term strategy on the development of renewable energy and energy conservation. Ms Anissa Wong said that an information paper would be prepared for the Council on the inventory of emissions from existing power plants, greenhouse gas emissions in Hong Kong and the long-term strategy on the development of renewable energy and energy conservation.

Bilingual versions of EIA reports

80. A Member suggested that the Administration consider asking project proponents to provide a Chinese version of EIA reports on top of the English version to fulfill the spirit of public consultation. Ms Anissa Wong explained that though the EIA Ordinance did not require the project proponents to provide a Chinese version, administratively, project proponents were required to provide bilingual versions of the Executive Summary of an EIA report. The Department would review the current arrangement, taking into account the practicability of the suggestion in view of the resources implications and time constraints as well as the technical nature of the documents. Another Member considered that from a practical point of view, the EIA reports were very technical and scientific in nature and those who could understand the contents of the EIA reports should be able to read the English version.

Tentative items for discussion at the next meeting

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

Agenda Item 7 : Date of Next Meeting

82. The next meeting was scheduled for 12 March 2007.

ACE Secretariat
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