

**Confirmed Minutes of the 125th Meeting of
the Advisory Council on the Environment
held on 9 May 2005 at 2:30 pm**

Present:

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

Absent with Apologies:

Prof LAM Kin-che, J.P. (Chairman)
Ms Goretti LAU
Mrs Mei NG, B.B.S.
Prof WONG Yuk-shan, B.B.S., J.P.

In Attendance:

Mr K K KWOK, J.P.	Permanent Secretary for the Environment, Transport and Works (Environment)/Director of Environmental Protection
Mr Raymond FAN	Deputy Director of Environmental Protection (2), Environmental Protection Department (EPD)
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 :

Dr Malcolm James BROOM Assistant Director (Water Policy), EPD

Dr YEUNG Hung-yiu Principal Environmental Protection Officer (Water Policy), EPD
Mr CHUI Wing-wah Chief Engineer, Harbour Area Treatment Scheme, Sewage Services Branch, Drainage Services Department

In Attendance for Agenda Item 4 :

Ms Brenda AU Chief Town Planner/Town Planning Board (1), Planning Department
Mr K K LING Chief Town Planner/Central Enforcement and Prosecution, Planning Department
Mr S T LAM Assistant Director/Existing Buildings 1, Buildings Department
Mr C C LUK Deputy Manager/Land Control Planning Team (Special Planning Team), Land Administration Office, Lands Department
Mr Clive LAU Senior Agricultural Development Officer, Agricultural Development Division, Agriculture, Fisheries and Conservation Department

Action

The Acting Chairman informed Members that following the Council's practice, he (as the Chairman of the Environmental Impact Assessment Subcommittee) would chair the meeting because the Chairman had fallen sick. He welcomed Mr Esmond Lee, Deputy Director of Environmental Protection (4), who had assumed the role of Secretary to the Council with effect from 1 April 2005 and Ms Monica Ko, Principal Information Officer of EPD, who attended the meeting for the first time.

Agenda Item 1 : Confirmation of the draft minutes of the 124th meeting held on 14 March 2005

2. The draft minutes were confirmed without amendment.

Agenda Item 2 : Matters arising from the minutes of the 124th meeting held on 14 March 2005

Para. 37 Visit to the Ngong Ping Sewage Treatment Plant after its completion in August 2005

3. The Acting Chairman said that the Secretariat would organize the site visit in due course.

Para. 39 Informal Meeting between Legislative Council Panel on Environmental Affairs and the Council

4. The Acting Chairman reminded Members that the informal meeting would be held on 10 May 2005 at 10:45 am in the Legislative Council Building. Ten Members would attend the meeting. To facilitate an effective exchange of views between Members and Legislative Council Members, the Acting Chairman suggested and Members agreed that they would discuss the focus of the informal meeting after Agenda Item 5.

Para. 40 Retreat for Council Members

5. The Acting Chairman informed Members that a retreat had been scheduled for 18 June 2005 pm at Hong Kong Parkview, starting off with a lunch. 11 Members indicated interest in joining.

Agenda Item 3 : Way Forward for the Harbour Area Treatment Scheme (HATS) Stage 2
(ACE Paper 8/2005)

6. Dr Malcolm Broom briefed Members on the background, results of the public consultation and implementation timetable of HATS Stage 2. Mr Raymond Fan stressed that the proposed implementation programme had taken into account comments received during the consultation exercise, including those from the Council. Most of the feedback indicated general support for early implementation of HATS Stage 2 and the polluter-pays principle. The Administration was making preparations for seeking funding approval from the Finance Committee of the Legislative Council towards the end of 2005 so as to deal with the immediately time-critical elements and remain on track for completing Stage 2A in 2013. The Government and the community were keen for a cleaned up harbour which would allow major water events such as cross-harbour swimming contests.

7. A Member said that biological treatment facilities were basic requirements for sewage treatment in major cities around the world. Stage 2B was not extravagant; it was essential to protecting the marine environment which would benefit the community in the long term. He had reservations about imposing a prerequisite that future stages of the project would be taken forward subject to the public's acceptance that the recurrent costs should be met through sewage charges. Mr K K Kwok explained that the Government was very keen on proceeding with Stage 2 and was prepared to meet the capital costs of the entire project. However, it was not appropriate for the Government to absorb the operating costs in an open-ended manner. For such an essential large-scale capital infrastructure project, the implementation of both Stages 2A and 2B would depend very much on the public's acceptance that the recurrent costs should be met through sewage charges.

8. In response to a Member's question on the possibility of meeting the operating costs from the General Revenue, Mr K K Kwok said that it was important to uphold the polluter-pays principle that the level of charges should reflect the level of usage or discharge. This was similar to the charging policy for water supply. The Acting Chairman considered that this charging policy would also encourage the public to reduce the generation of wastewater.

9. A Member was concerned about the recovery of recurrent costs through sewage charges. Without first identifying savings of public funds from other areas, it would be quite difficult for the Government to secure funding support from the Legislative Council or gain support from the community for increasing sewage charges.

10. A Member said that the proposed implementation programme was reasonable and technically sound. However, biological treatment under Stage 2B would probably not be necessary. HATS Stage 1 was able to remove 65-70% of the organic pollutants while the added value of secondary biological treatment would only be 20-25%, but the cost would be about three to four times higher than that of the Chemically Enhanced Primary Treatment (CEPT). On top of labour and electricity costs, the Government should take into account the costly maintenance of the treatment plant and costs related to disposal of biological sludge. He believed that the water quality of the Harbour would keep on improving with the implementation of Stage 2A. He urged the Government to proceed with Stage 2A as soon as possible and closely monitor the water quality of the Harbour. Apart from factors like dissolved oxygen and nitrogen level, gradual degradation of the accumulated sludge at the seabed should be closely monitored before deciding on Stage 2B.

11. A Member shared another Member's view that the Government should be mindful of the removal of mud accumulated at the seabed. Dr Malcolm Broom said that although the feasibility studies on Stage 2 did not assess whether the bottom deposit would be improved, there was evidence to show a significant improvement in the water quality of the Harbour after the commissioning of Stage 1. Dr Broom added that computer modelling projections indicated that by taking out the remainder of the pollutants, the level of dissolved oxygen would be further increased. He suggested that with a better oxygen environment, there would be more oxidation of sediments which would gradually improve their condition.

12. A Member pointed out that South China Sea was seen as the basin of sewage effluent, and nutrient removal would be necessary as a means to fulfill the global responsibility for protecting the marine ecology. Nutrient removal was related to very complicated biological reactions within the eco-system and the triggering threshold of the nutrient concentration in the

seawater. As long as the formation of harmful algal blooms existed, efforts should be made in studying the risks of nutrient concentration and conducting biological monitoring of the water quality in the Harbour as well as coastal water along South China in assessing the need for nutrient removal. Dr Malcolm Broom said that Stage 2B, including the adoption of nutrient removal, would be subject to a review in 2010/11.

13. A Member queried the objectives and performance indicators in terms of the incremental benefits of Stages 2A and 2B. Dr Malcolm Broom said that through a consultative process with stakeholders, a number of criteria had been established for application during the original assessment of the various HATS options and phasing of the project. The computer modeling exercise conducted to project the effect of discharges showed that most of the established criteria would be met in 2013/14 based on the projected population growth. However, with further growth in the volume of effluent in the long term, it was predicted that there would be a large “footprint” of toxic ammonia which would breach the established criteria. Similarly, it was predicted that there would be unacceptably low levels of dissolved oxygen along the shoreline of West Kowloon. For these reasons, it was clear that Stage 2B would be necessary at some point. When the timing of Stage 2B was reviewed in 2010/11, it would be necessary to look at prevailing trends in water quality and effluent volume and check these against current and projected compliance with the objective criteria.

14. A Member recapped some environmental specialists’ concern about possible harm of chlorination disinfection raised at the Council’s open meeting. Most of the pathogenic organisms would die off if they were left in the natural environment. EPD’s previous studies indicated a mild health risk for swimmers. He considered chlorination unnecessary. Attention should instead be paid to the possible adverse impact of chlorination on the marine environment. In response to the Member’s question on whether health risk assessment had been conducted on the use of chlorination disinfection, Dr Malcolm Broom said that a desk-top assessment of the application of the chlorination/dechlorination process had indicated that the impacts were likely to be extremely low. In view of that, it was considered worthwhile proceeding to a full environmental impact assessment for the proposal. Mr Chui Wing-wah added that some benchscale tests had been conducted on chlorination disinfection. It was concluded that a very low level of chlorine dosage would be required to achieve the target of re-opening the beaches in Tsuen Wan.

15. A Member was concerned about the impact of chlorination on the marine environment and eco-system, in particular on fish catch and habitat. The impact on fishermen’s livelihood should also be taken into account. Dr Malcolm Broom gave an assurance that this would be covered in the EIA.

16. A Member considered that the potential harmful effect of chlorination should be very minimal. Chlorine would immediately combine with ammonia in the wastewater at a speed of at least 1 000 times faster than the reaction between chlorine and organic matter. Chlorination disinfection had been used in the United States for over three to four decades and he had not come across any literature raising serious concern about the potential aquatic toxic problem. However, it was a Government policy decision as to whether it was justified to invest in chlorination disinfection so as to re-open the beaches. He suggested that chlorination be applied only during the swimming season to minimize the impact on the marine ecology.

17. A Member said that according to medical and biological research, bacteria such as *E. coli* would degenerate rapidly in open seawater. It seemed that the *E. coli* standard of 610/100mL currently adopted by the Government as the water quality standard for beaches was not so realistic for open sea area and discharging points. This would lead to an unnecessary or increased application of chlorination disinfection. He supported another Member's suggestion of conducting more pathogenic studies at the effluent discharging points so as to have a more realistic assessment of the potential risks before deciding on whether chlorination would be necessary and if so, the appropriate dosage to be applied.

18. Mr K K Kwok said that the Administration had referred to overseas disinfection practices and found that chlorination was a cost-effective method of treating effluent. He assured Members that the Government would be very cautious on disinfection and would carefully assess the possible impacts of disinfection, in particular the toxicity of chlorination and its impact on the environment, during the EIA process. Dr Malcolm Broom added that the EIA process would review alternative disinfection options.

19. A Member queried the cost-effectiveness of investing \$700 million in the disinfection facilities with an annual recurrent cost of \$80 million, just for re-opening the beaches which would benefit a relatively small number of people. The Acting Chairman considered this a political consideration. Mr Chui Wing-wah said that the Tsuen Wan District Council considered that the number of swimmers, which was small at the moment due to the poor water quality of the beaches, would increase when the water quality was improved. In addition, from environmental protection point of view, there was also a need to restore the water quality of the beaches in respect of *E. coli*, which was adversely affected by the effluent discharge from the Stage 1 outfall, to a healthier state. Dr Malcolm Broom added that there was concrete evidence of the water quality of the beaches being affected by the outfall from the existing treatment plant. The Acting Chairman suggested that the Government should be transparent in presenting the costs and benefits of chlorination disinfection, thereby letting the Legislative Council make an

informed decision based on the wider public interest.

20. Mr K K Kwok said that the Government had to balance the views in an even-handed manner. Stage 1 involved the collection of sewage from other parts of the territory and discharging at the Tsuen Wan area. The adverse impact of the effluent discharge on the beaches had been criticised by the Director of Audit and Tsuen Wan residents. It would be difficult for the Government to proceed with Stage 2 without rectifying the problem caused by the commissioning of Stage 1. Besides, the water quality would further deteriorate as a result of an increase in the sewage flow due to Stage 2A and the population growth if disinfection was not applied.

21. A Member agreed with the Acting Chairman that the transparency of the costs and benefits of the project, in particular the disinfection facilities, should be enhanced. Mr K K Kwok explained that the cost-benefit assessment would be made public when seeking funding approval from the Legislative Council.

22. Noting the statement that around 70% of organic pollutants could be removed in Stage 1, a Member enquired whether persistent organic pollutants (POPs) had been included. He pointed out that some of these chemicals, though in small quantities, were extremely toxic and had an adverse impact on the eco-system. There was increasing international concern on the issue of environmental pharmaceuticals. He considered that on top of the gross percentage of organic matter removal, the Government should take into account the total toxicity effect and remediation in the evaluation of sewage treatment. Dr Malcolm Broom explained that the organic pollutants referred to the Biochemical Oxygen Demand of the wastewater. It did not refer to persistent organic pollutants. However, a study on toxic substances in the marine environment in Hong Kong commissioned by EPD a few years ago had concluded that while certain hot-spots existed and needed to be monitored, toxic substances were generally not present in the marine environment at levels that would be a major cause for concern. Nevertheless, the issue could be revisited in the monitoring process.

23. In response to a Member's question on whether there was any local information on the efficiency of chemical and biological treatment with regard to the removal of endocrine disruptors and pharmaceuticals, Dr Malcolm Broom said that such data were not available. Another Member said that sewage in Hong Kong should not have a significant level of POPs as Hong Kong was not a big industrial city. Moreover, POPs mainly involved heavy metals but such matter had been under control. He considered that even if there were POPs which could not be removed by biological treatment,

the chemical coagulation and flocculation process adopted by CEPT was an effective method of removing some of the chemicals. Such method was currently adopted for treating water from Dongjiang river for water supply purposes. A Member understood that there were different views from the engineering and biological perspectives. He agreed that POP compounds in terms of industrial-related POPs might not be prevalent in the sewage, but POPs were also related to other compounds like antibiotics, environmental pharmaceuticals and health-care products, etc. It would not be comprehensive enough if only organic matter or nutrient removal was taken into account in evaluating the efficiency of the sewage treatment process. He hoped the Government would take a wider perspective and take into account the possible impact of POPs on the eco-system. Another Member shared the Member's view and said that in the United States, there were some newly discovered toxic chemicals which caused a physiological response to human beings and adversely affected the eco-system.

24. A Member enquired whether the target of completing Stage 2A in 2013 could be further advanced. Mr Chui Wing-wah explained that the critical part of the works was the construction of the sewage conveyance system which involved the construction of deep underground tunnels over 20 km long and 130 metres deep. Before construction could commence, long lead time would also be required for a series of critical preparations, including site investigation, detailed planning and statutory procedures.

25. The Acting Chairman was concerned about the possible nuisance and inconvenience to the public during the construction phase, in particular on the northern part of the Hong Kong Island, which was densely developed. Mr Chui Wing-wah said that since the works there mainly involved the construction of deep tunnels, the majority of the construction activities were to be carried out underground and hence disturbance should be minimal.

26. In response to two Members' enquiries about the population projection, Dr Malcolm Broom explained that the projection was assessed on the basis of the full development scenario for the HATS service area by the Planning Department, taking into account the prevailing planning standard guidelines. Stage 2A aimed at dealing first and foremost with the untreated sewage of Hong Kong Island regardless of whether there would be an anticipated change in the population. It was also intended to cater for future population increases which would mainly be on the Kowloon side.

27. In response to a Member's query on the cost projections, Dr Malcolm Broom explained that the estimation of recurrent cost implications reflected the projected full flow of sewage covering corresponding service areas in different stages. The projected recurrent costs for Stage 2A, which were in addition to those of Stage 1, covered the costs in treating sewage

generated by the population of the northern and western shores of Hong Kong Island plus the anticipated additional population growth in the Stage 1 catchment. Mr Chui Wing-wah added that the capital cost projections had included the upgrading of the preliminary treatment works, construction of the deep tunnel system and expansion of the treatment plant at Stonecutters Island. As it would be very difficult to expand the deep tunnels afterwards, adequate tunnel sizes had to be provided in one go to cover the ultimate scenario of the population build-up. Regarding the treatment works, such ultimate population scenario had to be adopted for planning purposes as well so as to make adequate provisions, e.g. land reservation, for expansion when needed. Mr Chui assured Members that should future studies indicate room for fine-tuning the population projections or further phasing the expansion of the treatment plant, the cost projections would be adjusted accordingly.

28. A Member urged the Government to proceed with Stage 2 as soon as possible. He supported the recovery of the operating costs through increases in sewage charges given the additional sewage treatment infrastructure and services for the public. By taking a systematic and transparent approach, he believed that the community would eventually accept the arrangement.

29. The Acting Chairman concluded that the Council -

- (a) supported the proposed implementation programme of HATS Stage 2;
- (b) urged for early implementation of Stage 2A;
- (c) considered that the need for Stage 2B and its timing should be considered having regard to issues such as the effect of Stage 1 and population build up; and
- (d) hoped that the Government would enhance the transparency of the whole process relating to HATS Stage 2, in particular the cost-benefit analysis of disinfection.

30. Mr K K Kwok thanked the Council for supporting the proposed way forward for HATS Stage 2. He reiterated that the Government was very keen on implementing both Stages 2A and 2B as early as possible. Action was being actively taken to kick-start items on the critical path and expedite the delivery of the project.

Agenda Item 4 : Amendments to the Notes for “Agriculture” Zone on Outline Zoning Plans to Strengthen Planning Control on Land Filling Activities
(ACE Paper 9/2005)

31. Ms Brenda Au briefed Members on the amendments to the Notes for the “Agriculture” zone on Outline Zoning Plans (OZPs) and the definitions of terms used in statutory plans to strengthen planning control on land filling activities in the New Territories as well as the background and latest development of the land filling activities at She Shan Tsuen in Tai Po.

32. The Acting Chairman said that the Council was pleased to note that the Planning Department had taken proactive measures in reviewing the planning control mechanism with a view to controlling land filling activities on private agricultural land.

33. A Member welcomed the proposal and enquired about the results of the site investigation into the man-made slopes at She Shan Tsuen, which was carried out by the landowners’ consultants (as mentioned in paragraph 4 of the paper). Mr S T Lam said that the site investigation just started the week before and the investigation report was expected to be submitted to the Buildings Department around July.

34. A Member said that there was a phenomenon of landowners jumping the queue in performing land filling activities on agricultural land before submitting applications for land use changes. Mr K K Ling explained that land filling activities on agricultural land would be closely monitored and enforcement action would be taken against unauthorized land filling activities. The Member also said that there seemed to be a mismatch between the zoning of agricultural land use and the needs of the community, leading to quite an area of farmland being deserted. Ms Brenda Au explained that the designation of “Agriculture” zones on OZPs took into account not only the need for agricultural land, but also the need to preserve the rural character. The OZPs would be reviewed regularly by the Town Planning Board in the light of changes in planning circumstances and the needs of the community.

35. In reply to some Members’ enquiry about the rationale of the 1.2 metres for the purpose of laying of soil for cultivation, Mr Clive Lau explained that the yardstick had taken into account comments from relevant Government departments and information about topsoil from the Food and Agriculture Organization of the United Nations. Under normal circumstances, the depth of soil needed for agricultural purposes would not exceed about 1 metre. A balance was struck between the need to control illegal land filling activities and the disturbance to landowners with genuine agricultural needs. Landowners could submit applications for land filling exceeding 1.2 metres for genuine agricultural purposes though the number of such cases was expected to be on the low side based on past experience.

36. A Member also welcomed the proposal as he considered that illegal dumping was getting more serious. However, he was concerned about the limitations in planning enforcement as highlighted in the paper. He also

asked whether the Administration was confident of enforcing the new legislative provisions so as taking effective prosecution. Mr K K Ling explained that owing to resource constraints, it was not possible to conduct regular site inspections of all agricultural zones which covered about 3 000 ha of land. Nevertheless, they would step up enforcement actions with the assistance of technology, such as aerial photogrammetry. For dumping of materials obviously not for agricultural purposes, such as building materials and construction waste, action would be taken as soon as practicable regardless of the depth of the landfill. On the technical aspect of measuring the top soil of 1.2 metres, he took the She Shan Tsuen case as an example and explained that information on baseline measurement and conditions had to be obtained by means of land surveys, aerial photographs and site photographs which would be rather resource demanding. Mr Ling agreed with the Member that complaints from members of the public would be a useful source of information on unauthorized land filling activities. The Planning Department had pledged to conduct site inspections and issue a reply within four weeks upon receipt of a complaint. Mr Ling stressed that planning enforcement action was a remedial measure after damage had been done on the land. Concerted efforts by relevant Government departments and the community as a whole would be necessary for effective control of unauthorized land filling activities.

37. Upon Members' enquiry on the option discussed at previous meetings to regulate the activities by making land filling exceeding a certain size a designated project under the Environmental Impact Assessment Ordinance, Mr Raymond Fan said that the Legislative Council Panel on Environmental Affairs had been consulted on the proposal in January 2005. The Panel considered that this proposal would not be as effective as tightening control in the planning legislation. Moreover, it would be difficult to turn down an application for an environmental permit purely on visual impact or landscape grounds as most of the land filling activities would be temporary in nature and similar to those found on any construction site. Nevertheless, EPD would continue to join hands with relevant departments in monitoring land filling activities.

38. A Member enquired about the publicity plan to announce the amendments to the Notes so that the general public would be aware of the new provisions and could lodge complaints if illegal land filling activities were detected. Ms Brenda Au explained that there had been no publicity before the gazetting of the amendments to the relevant OZPs to prevent operators from accelerating land filling activities to establish an "existing use" status for such activities which would be then tolerated under the Town Planning Ordinance (TPO). Upon exhibition of the amendments for public inspection in accordance with the provisions of the TPO, information papers had been issued to the District Councils and Rural Committees concerned. The Planning Department would consider the suggestion of more publicity but had to be prudent as the amendments had met with strong objections from some

rural organizations. Nevertheless, green groups and the rural community were generally aware of the amendments. A Member considered that as enforcement actions could be taken once the OZPs were gazetted, more publicity work could be carried out even during the exhibition period. Another Member considered that even if the number of objections would increase as a result of increased publicity, the most important consideration would be the strength of the arguments rather than the number of objections received.

39. A Member suggested publicity tie in with the proposed construction waste charging scheme to be launched by EPD later in the year. Mr Raymond Fan said that a PR plan would be formulated and launched for the charging scheme and would try to incorporate the publicity on the amendments to OZPs as a package on waste management strategies.

40. A Member was concerned about the potential consequences of controlling land filling activities on private land as the contractors had to find alternative means to dump the waste having regard to the short life span of the public fills. Mr Raymond Fan explained that a holistic approach in waste management would be pursued which would include waste reduction, waste recycling, both locally and abroad, as well as waste disposal at public fills.

41. The Acting Chairman concluded that the Council strongly supported the amendments to the Notes to strengthen planning control on land filling activities on agricultural land and hoped that effective enforcement actions would be taken against unauthorized land filling activities and concerted efforts by relevant Government departments would continue in dealing with the problem.

Agenda Item 5: Any Other Business

Tentative items for discussion at the next meeting

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

Informal Meeting between Legislative Council Panel on Environmental Affairs and the Council (see paragraph 4 under Agenda Item 2)

43. The Acting Chairman informed Members that the proposed items for discussion included waste management, HATS Stage 2 and the polluter-pays principle, and development of Lantau Island.

44. On waste management, Chairman of the Waste Subcommittee said that the Waste Subcommittee had discussed the issue and would like to urge the Government and the Legislative Council to expedite concrete actions

on the initiatives of waste management. He proposed to focus on the product responsibility scheme, construction waste charging scheme and alternative waste treatment methods such as thermal treatment. Mr Raymond Fan added that the Waste Subcommittee proposed an umbrella of products rather than individual products under the product responsibility scheme.

45. On HATS Stage 2 and the polluter-pays principle, the Acting Chairman proposed to convey the Council's support for HATS Stage 2A and the polluter-pays principle (as discussed under Agenda Item 3) and to urge for legislative support for increases in sewage charges.

46. On the development of Lantau Island, a Member said that a holistic view on the development of Lantau and better co-ordination between Government departments were necessary. He proposed to alert the Panel to the potential impact on air quality and health of residents arising from increased vehicular flow on the Hong Kong-Zhuhai-Macao Bridge and the quality of fuel used by vehicles from the Mainland, having regard to the differences in emission standards for vehicles and fuel across the boundary. The Acting Chairman also proposed to highlight the need for a strategic environmental assessment for the conceptual development of the whole Lantau.

Agenda Item 6 : Date of Next Meeting

47. The next meeting was scheduled for 13 June 2005.

ACE Secretariat
May 2005