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Legislative Council

LC Paper No. CB(1) 2663/01-02
(These minutes have been seen by the Administration)

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Panel on Environmental Affairs

Minutes of meeting held on Monday, 22 July 2002, at 2:30 pm in Conference Room A of the Legislative Council Building

Members present	:	Hon CHOY So-yuk (Chairman) Hon Cyd HO Sau-lan (Deputy Chairman) Ir Dr Hon Raymond HO Chung-tai, JP Hon Martin LEE Chu-ming, SC, JP Hon CHAN Yuen-han, JP Hon Miriam LAU Kin-yee, JP Hon Emily LAU Wai-hing, JP Hon LAW Chi-kwong, JP Hon Abraham SHEK Lai-him, JP Hon Henry WU King-cheong, BBS, JP Hon Tommy CHEUNG Yu-yan, JP Hon Michael MAK Kwok-fung Hon LAU Ping-cheung Hon Audrey EU Yuet-mee, SC, JP
Non-Panel Member attending	:	Hon James TIEN Pei-chun, GBS, JP
Members absent	:	Hon SIN Chung-kai Hon WONG Yung-kan Hon LAU Kong-wah Dr Hon LO Wing-lok
Public officers attending	:	Environment, Transport and Works Bureau Mr Howard CHAN Deputy Secretary (Acting)

Environmental Protection Department

Mr C W TSE
Assistant Director (Air)

Clerk in attendance : Miss Becky YU
Chief Assistant Secretary (1)1

Staff in attendance : Mrs Mary TANG
Senior Assistant Secretary (1)2

I Confirmation of minutes of previous meetings

(LC Paper No. CB(1)2305/01-02 — Minutes of the meeting held on 22 April 2002

LC Paper No. CB(1)2307/01-02 — Minutes of the joint meeting with the Health Services Panel held on 23 May 2002

LC Paper No. CB(1)2308/01-02 — Minutes of the joint meeting with the Transport Panel held on 13 June 2002)

The minutes of the meetings held on 22 April, 23 May and 13 June 2002 were confirmed.

II Information paper issued since last meeting

(LC Paper No. CB(1)2189/01-02 — A consultation document on water quality criteria prepared by the Environmental Protection Department

LC Paper No. CB(1)2318/01-02(01) — List of follow-up actions arising from discussion

LC Paper No. CB(1)2318/01-02(02) — List of outstanding items for discussion)

III Air quality in Hong Kong

(LC Paper No. CB(1)1629/01-02 — An information paper entitled "Improving air quality in Pearl River Delta Region"

LC Paper No. CB(1)1973/01-02(05) — Information paper provided by the Administration)

2. The Deputy Secretary for the Environment, Transport and Works (Acting) (DS/ETW(Ag)) briefed members on the progress on air pollution control in Hong Kong and the findings of the Study on Pearl River Delta Regional Air Quality (the Study) by highlighting the salient points in the information papers.

3. Ms Emily LAU noted with concern that despite the implementation of measures recommended in the Study, the Governments of the Hong Kong Special Administrative Region (HKSAR) and the Pearl River Delta Economic Zone (PRDEZ) could only be able to achieve the emission reduction targets in 2010 at the earliest. Given that the estimated growth of Gross Domestic Product (GDP) of PRDEZ, as shown in Table 2.3 of the Executive Summary of the Study, would far exceed that of HKSAR in the next decade, Ms LAU cautioned that this would represent a greater potential for a higher degree of pollution in PRDEZ as a result of rapid development. She enquired about the efforts which the Government of PRDEZ would take to ensure the implementation of improvement measures to achieve the emission reduction targets. Noting that the growth in economy, population, energy consumption and traffic within the Pearl River Delta Region (the Region) would be 150%, 20%, 130% and 190% respectively by 2010 using 1997 as a base, the Chairman enquired about the growth rate at present.

4. DS/ETW(Ag) advised that the anticipated growth was calculated based on GDP and economic growth within the Region. He said that the Study did not provide the latest growth rate but agreed to provide the projected growth rate as at 2000 for members' reference. He added that the two Governments would aim to reduce, on a best endeavour basis, the regional emissions of sulphur dioxide (SO_2), nitrogen oxides (NO_x), respirable suspended particulates (RSP) and volatile organic compounds (VOC) by 40%, 20%, 55% and 55% respectively by 2010, using 1997 as the base year. Both would strive to reduce the emissions of the four air pollutants from their own sources by the same levels and would jointly draw up a regional air quality management plan and assign the responsibility for coordinating and monitoring progress of the improvement measures to the departments concerned. An expert group comprising representatives of the Environmental Protection Department of HKSAR and the Guangdong Environmental Protection Bureau would be set up to jointly monitor trends and changes in regional air quality and evaluate the effectiveness of the improvement measures. The expert group would also be responsible for training relevant personnel of the two Governments, exchanging technical know-how and keeping in view the feasibility of introducing new technologies and measures. DS/ETW(Ag) added that the Study had identified power plants, motor vehicles and industrial operations were the major emission sources in PRDEZ. Therefore, it recommended the Guangdong

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Provincial Government (GPG) to consider the following measures -

(a) reduce emissions from power plants through transmission of hydro-electricity from the west, using natural gas instead of coal as fuel and upgrading existing plants;

(b) reduce motor vehicle emissions through speeding up the tightening of motor fuel and vehicle emission standards; and

(c) reduce industrial emissions through targeting the most polluting industrial processes and requiring their upgrading or the installation of control equipment.

5. The Assistant Director of Environmental Protection (Air) (ADEP(A)) supplemented that to improve air quality, GPG had put in place a five-year Blue Sky Project in 2000 which had resulted in the promotion of cleaner production technology and closure of some polluting industrial facilities. A review of air control measures for the energy, industry and motor vehicle sectors would also be conducted as part of the Project. At members' request, the Administration would ask GPG for information on the latest development of the Project, particularly the number of polluting industrial facilities that had been closed down, and the progress of implementation of air control measures in PRDEZ.

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6. Mr LAW Chi-kwong noted that the emission levels of SO_2, NO_x, RSP and VOC was expected to increase by 53%, 34%, 34% and 25% respectively if no additional control measures were put in place while the same would decrease by 40%, 20%, 55% and 55% respectively if the recommended improvement measures were jointly implemented by the two Governments. He questioned the accuracy of such projections given that these were made using 1997 as the base when substantial changes, particularly in respect of population growth, had been taken place over the years. DS/ETW(Ag) advised that 1997 was used as the base year for emission inventory because this was the time when full emission data on HKSAR and PRDEZ were available. The Study had projected the emission levels of future years taking into account the growth in population and economic activities in the Region. It was expected that both HKSAR and PRDEZ would be able to achieve their respective air quality objectives if the overall emission reduction potential was realized. Mr LAW remarked that it would be much simpler if the emission projections were made on a per capita basis.

7. Referring to figure 2-3 at the Annex to the Executive Summary of the Study (LC Paper No. CB(1)1629/01-02) regarding the Base Year Emission Summary, the Chairman enquired whether the data provided in the Summary pertained to the emission data for 1997 and if so, the latest figures for 2002. DS/ETW(Ag) confirmed that the figures were based on the emission data for 1997. The Administration would provide the latest figures as and when the emission inventory done in the Study was updated. As regards figure 2-4, DS/ETW(Ag) said that this provided the estimated

VOC, RSP, NO_x, SO_2 emission trends in the Region without additional control measures. He concurred that more needed to be done in the industry and energy sectors which would otherwise be experiencing a higher emission trend. The Chairman requested and the Administration agreed to provide the estimated VOC, RSP, NO_x, SO_2 emission trends in Hong Kong for comparison purpose.

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8. On the progress of implementation of the measures recommended in the Study, DS/ETW(Ag) said that both Governments had agreed to examine the details of implementation with regard to local circumstances. Gradual improvement in the air quality within the Region would be expected upon the phased implementation of these measures. Mr MAK Kwok-fung asked if the two Governments had signed any agreement on the control of regional air quality and if so, whether there was any penalty if either party had failed to abide by the terms of the agreement. DS/ETW(Ag) advised that the agreement between the two Governments was in the form of a joint statement announced on 29 April 2002 when consensus was reached on the implementation of long-term measures to improve air quality in the Region. The effectiveness of the improvement measures would be monitored by the expert group.

9. Mr Martin LEE expressed doubt that both Governments could be able to achieve in parallel the emission reduction targets by 2010. He was concerned that PRDEZ would relocate the polluting processes up north in an attempt to achieve the targets on time. DS/ETW(Ag) said that both Governments considered it possible that the intended emission reduction targets could be achieved by 2010. While the details of implementation of the improvement measures had yet to be worked out, both Governments had agreed to achieve the targets on a best endeavour basis. The expert group would evaluate the effectiveness of the improvement measures and make adjustments as and when necessary.

Emission trading

10. Ms Emily LAU sought elaboration on the emission trading. DS/ETW(Ag) explained that emission trading had been successfully applied in many overseas countries in the past and proven to be an effective tool in improving regional air quality. The Administration would explore the feasibility of emission trading in collaboration with the private sector. ADEP(A) added that emission trading was firstly adopted in the United States of America. In general, there were three types of emission trading, namely -

(a) ***off-setting*** which would apply to reduce the polluting effects of a new polluting facility, such as a power generation plant, in a already polluted area by a corresponding decrease in other polluting activities within the area;

(b) ***emission credit*** which would be given to polluting facilities that could lower their pollution loads to a level below the statutory permissible limits. These credits could be traded on a voluntary

basis with other facilities which were not able to meet the required emission standards.

(c) ***cap and trade*** which was adopted by the Governments of United States and Canada in 1990 to control the emission of power generating facilities in some of their regions to control acid rain. A statutory emission level was assigned and a system of emission credit was set up to govern the level of pollution from these power generating facilities. As a result of effective monitoring and enforcement, the emission levels from these power generating facilities were found to have decreased significantly.

11. In response to Ms Miriam LAU's question on whether emission trading could be applied on a local or a regional basis, ADEP(A) said that plans for emission trading had yet to be worked out. Ms Cyd HO requested that an assessment be made on the practicability of implementing emission trading by way of administrative and/or legislative means by the two Governments in collaboration with industry sector. DS/ETW(Ag) said that the expert group would make reference to overseas experience when studying the feasibility of applying emission trading as one of the tools to improve the regional air quality.

Emission from power generation

12. Noting that the Study had identified that power plants and printing operations were two of the major pollution sources in Hong Kong, Miss CHAN Yuen-han enquired about the measures which should be taken to tackle the problem. DS/ETW(Ag) advised that at present about 60% of the electricity generated in Hong Kong was from facilities operated on coal while the remaining 40% was from those operated on natural gas. Desulphurization equipment was applied in power generation facilities operated on coal to reduce pollutant emissions. Efforts would be made to use cleaner fuel for power generation in order to reduce SO_2, NO_x and RSP emissions in Hong Kong.

13. While acknowledging that all coal-fired power generation plants in Hong Kong built after 1991 were required to have flue gas desulphurization system and low nitrogen oxide burners, and that all new power plants commissioned after 1996 were required to use natural gas, Mr Henry WU enquired about the measures adopted to reduce emissions from existing power plants which were built before 1991. DS/ETW(Ag) advised that all power generating plants operating in Hong Kong were required to be licensed and subject to prescribed conditions. ADEP(A) added that these conditions were based on the latest technology available at the time of issue of licences. Coal-fired power generating plants built before 1991 were required to be retrofitted with low nitrogen oxide burners. The old-type power generators were mostly used as back-up facilities. With the introduction of emission reduction measures, NO_x and SO_2 emissions from power generating plants were found to have decreased by 71% from 1992 to 2000 and 65% from 1993 to 2000 respectively, despite

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an increase of 43% in electricity demand during this period. At members' request, the Administration undertook to provide the emission data for individual power generating plants in Hong Kong.

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14. As regards the situation in PRDEZ, ADEP(A) advised that about 80% of the power generation facilities in PRDEZ were operated on coal while the remaining on other fuels. The use of coal as fuel had been banned in new power generation facilities in PRDEZ. In addition, more electricity would be acquired from western provinces. Changes of fuel mix to cleaner fuel were also being explored. The two Governments would jointly work out the best means to achieve the emission reduction targets. Miss CHAN Yuen-han requested and the Administration agreed to seek information on whether power generation facilities in PRDEZ were government or privately owned.

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15. As the Study recommended that GPG should reduce emissions from power plants through transmission of hydro-electricity from the west and the use of natural gas for power generation, Mr Martin LEE expressed worries that this might in turn encourage the use of nuclear energy which was the concern of the people of Hong Kong. DS/ETW(Ag) advised that while GPG would be working on changes of fuel mix to cleaner fuel for power generation, the details of implementation had yet to be worked out. The Study recommended the use of alternative energy such as hydro-electric power, wind energy, solar energy and geothermal energy but had not recommended the increased use of nuclear energy in order to achieve the emission reduction targets. At members' request, DS/ETW(Ag) undertook to provide more information on how the use of electricity and the emission levels in PRDEZ could be effectively monitored.

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Vehicular emission

16. Ms Miriam LAU opined that despite the contribution made by the transport industry to improve the air quality in Hong Kong by switching to ultra low sulphur diesel and liquefied petroleum gas (LPG), such efforts would become futile if PRDEZ failed to make parallel improvements and continued to use high sulphur diesel. She asked whether GPG was prepared to consider the switch from diesel to LPG vehicles and the use of cleaner vehicle fuel. Given the relatively smaller size of the vehicle fleet in Hong Kong, DS/ETW(Ag) said that air quality improvement measures could be implemented quickly and flexibly, particularly with the joint efforts of the Legislative Council and the transport industry. However, the situation in PRDEZ was very much different as it had a much larger size of vehicle fleet and its vehicle fuel policy was governed by the national policy. The Study recommended that PRDEZ should endeavour to improve vehicle engine technology as well as fuel quality to comply with the more advance emission standards such as Euro III by 2005/6 and ultimately in line with the international emission standards. It was suggested that newer inspection and maintenance techniques be introduced to complement the advancement in emission standards. Consideration should also be given for PRDEZ to explore the use of alternative fuel vehicles and limit the increase in polluting vehicles. The progress of

implementation of these measures would be jointly monitored as part of the regional air quality management plan.

17. Ms LAU remained concerned about the slow progress in controlling vehicle emission in PRDEZ. She enquired if cleaner vehicle fuel could be introduced to PRDEZ in advance of other regions in the Mainland. ADEP(A) said that while the fuel policy in PRDEZ had to follow that of the national policy, the Study had proposed GPG to consider expediting the implementation of air quality improvement measures in PRDEZ.

18. On Mr MAK Kwok-fung's suggestion that further legislative changes be implemented to control roadside pollution in Hong Kong, DS/ETW(Ag) said that a great deal had been done to reduce motor vehicle emissions and there had been measurable improvements in the roadside air quality. The need for further improvement measures would have to be assessed taking into account their cost effectiveness.

VOC emission

19. Given that the details of improvement measures for PRDEZ had yet to be worked out, Ms Cyd HO expressed concern that the Administration might not be able to obtain all the information it needed on air pollution control in PRDEZ. Apart from controlling emissions from power generation and vehicles, both sides should step up efforts in promoting environmental practices in consumer spending. DS/ETW(Ag) affirmed that the Study had recommended control over VOC containing consumer products such as paints and aerosol sprays. To control VOC emission, the Study recommended the Administration to put in place a labeling system and a set of prescribed VOC content limits for VOC containing products. Efforts should also be made to enhance public awareness on the need to avoid the use of products containing high levels of VOC.

Ozone emissions

20. Mr LAW Chi-kwong enquired if there was any control on indoor air quality, particularly on the emission of ozone from photocopying machines and laser printers which might have an adverse impact on health. ADEP(A) explained that the level of ozone emitting from photocopying machines and laser printers was very low and would have negligible effect on regional air quality. Notwithstanding, ozone filters were installed to avoid any impact on indoor air quality. Some organizations were considering the introduction of green labeling systems similar to that adopted in the United States that would help encourage the use of more environmentally friendly equipment. The Chairman advised that the subject on control of indoor air quality was on the list of outstanding items to be discussed by the Panel.

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Way forward

21. Mr MAK Kwok-fung considered it useful for the Administration to conduct studies on the correlation between air quality and respiratory diseases with a view to enhancing public awareness on the need for preventive measures. ADEP(A) said that both the University of Hong Kong and the Chinese University of Hong Kong had carried out studies on the impact of air pollution on health. While it was generally accepted that air pollution would have an adverse impact on health, the occurrence of respiratory disease should not be used as an indicator since there were many other influencing factors such as smoking, climate and hygiene. Members of the public were made aware of the quality of air through the Air Pollution Index (API). Health warnings would be made during days of very high API to help those suffering from respiratory diseases to stay away from heavily polluted locations.

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22. Noting that the expert group would meet shortly to discuss the regional air quality management plan, members requested and the Administration agreed to brief the Panel on the latest development of the plan at an appropriate time.

IV Any other business

23. The Chairman announced that this was the last meeting for the session. She thanked the Administration for its contributions at the meetings.

24. There being no other business, the meeting ended at 4:12 pm.

Legislative Council Secretariat
9 October 2002