

**立法會**  
**Legislative Council**

LC Paper No. CB(1) 956/02-03  
(These minutes have been seen  
by the Administration)

Ref : CB1/PL/EA/1

**Panel on Environmental Affairs**

**Minutes of meeting held on  
Thursday, 6 February 2003, at 3:30 pm  
in Conference Room A of the Legislative Council Building**

**Members present** : Hon CHOY So-yuk (Chairman)  
Hon Cyd HO Sau-lan (Deputy Chairman)  
Dr Hon David CHU Yu-lin, JP  
Ir Dr Hon Raymond HO Chung-tai, JP  
Hon WONG Yung-kan  
Hon LAU Kong-wah  
Hon Miriam LAU Kin-yee, JP  
Dr Hon LAW Chi-kwong, JP  
Hon Henry WU King-cheong, BBS, JP  
Dr Hon LO Wing-lok  
Hon LAU Ping-cheung

**Member attending** : Hon CHAN Kwok-keung

**Members absent** : Hon Martin LEE Chu-ming, SC, JP  
Hon SIN Chung-kai  
Hon Emily LAU Wai-hing, JP  
Hon Audrey EU Yuet-mee, SC, JP

**Public officers attending** : **For item IV**  
Environment, Transport and Works Bureau  
  
Mr Donald TONG  
Deputy Secretary (Environment)1

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Mr Raistlin LAU  
Principal Assistant Secretary (Environment)1

Electrical and Mechanical Services Department

Dr K M LEUNG  
Chief Engineer (Energy Efficiency Office)

Camp Dresser & McKee International Inc.

Mr James CHAN  
Technical Director

Mr Raymond CHAN  
Project Manager

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

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

Miss Mandy POON  
Legislative Assistant 4

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- I. Confirmation of minutes**  
(LC Paper No. CB(1) 826/02-03 — Minutes of the meeting held on  
20 December 2002)

The minutes of the meeting held on 20 December 2002 were confirmed.

**II. Information paper issued since last meeting**

2. Members noted the following information papers which had been issued since last meeting -

LC Paper No. CB(1) 685/02-03 — A publication entitled “Texts from Brazil - Brazil on the way to sustainable development” provided by the Brazilian Consulate General in Hong Kong

### **III. Items for discussion at the next meeting**

(LC Paper No. CB(1) 843/02-03(01) — List of follow-up actions

LC Paper No. CB(1) 843/02-03(02) — List of outstanding items for discussion)

3. Members agreed to hold a joint meeting with the Panel on Transport to receive a briefing by the Administration on the progress of measures to address noise impact on existing roads on 24 February 2003 at 2:30 pm. To make way for the joint meeting, it was agreed that the next regular meeting on the same day be re-scheduled to start at 3:30 pm instead of 2:30 pm to discuss the detailed proposals on landfill charging for construction and demolition waste.

4. To observe the progress of the trials and studies on the Harbour Area Treatment Scheme, members decided to visit the Stonecutters Island Sewage Treatment Works in the afternoon of 25 February 2003.

*(Post-meeting note : At the request of the Administration, the agenda item on “Detailed proposals on landfill charging for construction and demolition waste” was replaced by “Measures to promote municipal solid waste recovery.”)*

### **IV. Renewable energy**

(LC Paper No. CB(1) 843/02-03(03) — Background brief prepared by the Legislative Council Secretariat

LC Paper No. CB(1) 843/02-03(04) — Paper provided by the Administration)

5. The Deputy Secretary for the Environment, Transport and Works (Environment)1 (DSETW(E)1) briefly explained the background to the two-stage consultancy study commissioned by the Electrical and Mechanical Services Department to investigate the feasibility of wider application of new and renewable energy technologies (collectively known as renewable energy (RE)). Stage 1 of the “Study on the Potential Applications of Renewable Energy in Hong Kong” (the Study) had just been completed. After initial consultation with the Panel and relevant advisory bodies, the Executive Summary of the Stage 1 Study would be uploaded onto the Internet for general access by the public and be sent to stakeholders to seek their views on the consultant’s findings and recommendations before the Government formulated a strategy to promote the wider use of RE in Hong Kong. He also informed members of the progress of the Stage 2 demonstration project to evaluate the performance of three types of building-integrated photovoltaic (BIPV) panels, which some members had observed during their visit to the Wanchai Tower on 4 February 2003.

6. Mr James CHAN/Camp Dresser & McKee (CDM) International Inc then gave a presentation on the findings and recommendations of the consultancy study.

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Wind power

7. Referring to Table 2 of the Executive Summary of the Study, the Chairman queried the low projected contributions of wind and solar power as opposed to that of energy-from-waste. Mr James CHAN/CDM explained that specific institutional, economic and social constraints should be resolved before solar and wind energy systems could be deployed in a large scale in Hong Kong. For example, while most of the high wind resource areas in Hong Kong were located within country parks, the building of wind turbines in these areas might not be compatible with the objectives of the Country Parks Ordinance (Cap. 208). Solar energy systems were relatively expensive compared to other technologies. The Chairman opined that the constraints of building wind turbines in urban and rural areas could be overcome by legislative amendments to the Country Parks Ordinance and the Buildings Ordinance (Cap. 123). She felt that the Administration was not fully committed to the development of RE, in particular the use of wind power given that only a relatively small number of wind turbines were installed.

Building integrated fuel cells

8. Dr LAW Chi-kwong noted that the use of building integrated fuel cells was widely advocated in the United States of America (USA) but this was not elaborated in the consultancy study. He enquired about the potential development of building integrated fuel cells in Hong Kong. Mr James CHAN/CDM explained that the resource potential of fuel cell technology was limited by the availability of fuel such as natural gas, LPG and town gas. Given the cost implications and site constraints, its applicability as a building integrated technology in Hong Kong would be left for the market to decide. On the Government's role in promoting the use of fuel cells as a source of RE, DSETW(E)1 said that the Administration would keep in view the latest technological development in formulating its RE policies.

9. Noting that the Hong Kong Electric Company would be importing natural gas from the Mainland for generating electricity in Hong Kong, Mr WONG Yung-kan considered it necessary for the Government to make clear its stance on the application of RE in Hong Kong. DSETW(E)1 affirmed that the Administration was committed to developing RE in Hong Kong as evidenced in the application of RE in Government buildings/amenity facilities as set out in Annex II to the Administration's paper. The Administration would be consulting all the stakeholders on the way forward before formulating a strategy to promote the wider use of RE in Hong Kong. He welcomed public views in this respect.

Solar power

10. Referring to the major RE projects on Government buildings/amenity facilities that were using solar panels for water heating and power generation in the aforesaid Annex II, Ms Miriam LAU enquired whether these projects were successful

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and if so, consideration should be given to extending the use of RE to other existing Government buildings/facilities such as hospitals which utilized a lot of energy for water heating. The Chief Engineer (Energy Efficiency Office) (CE(EEO)) explained that the Administration had not yet completed the collection of technical data on the efficiency and effectiveness of RE projects, including the BIPV systems in Wan Chai Tower, and it would take time to carry out a comprehensive assessment. Ms LAU however pointed out that solar panels were already a well-tested technology. Besides, the outcome on the use of solar energy in projects implemented back in 1998 to 2000 should have been made available. Apart from new RE projects, Ms Cyd HO asked if it was possible to include BIPV systems in projects under construction such as the new Police Headquarters in Arsenal Street. Consideration should also be given to including BIPV systems in the design of new schools. However, she did not recall that any such funding applications had been made by the Administration. DSETW(E)1 advised that BIPV systems would continue to be applied where appropriate in new Government buildings and projects as it would be more cost effective to include these systems at the planning and design stage. The Administration would need to examine the cost effectiveness of installing BIPV systems in existing buildings taking into account the high retrofitting costs.

11. While supporting for further research on the development of RE in Hong Kong, Ir Dr Raymond HO said that he had already pointed out at the LegCo motion debate on RE on 17 January 2001 that apart from photovoltaic systems, other forms of RE such as wind and wave power might not be practicable given the space and resource constraints in Hong Kong. To this end, it might be worthwhile to consider establishing joint ventures with the provincial governments of Shenzhen or the Pearl River Delta Region in developing RE. DSETW(E)1 affirmed that the Administration would continue to take the lead in exploring RE in public works projects. Meanwhile, the BIPV systems installed in Wanchai Tower would continue to meet in part the electricity requirement for the building. He added that while thoughts had not been given to establishing joint ventures with the Pearl River Delta Region at this stage in developing RE, the Administration would take this into account together with the outcome of the public consultation before deciding on the way forward in the development of RE in Hong Kong.

Energy-from-waste

12. Dr LAW Chi-kwong queried whether energy-from-waste should be regarded as a source of RE. The Chairman echoed that it was confusing to include energy-from-waste in the Study of RE. Mr James CHAN/CDM explained that at present, there was no universal definition for RE. While some countries did not accept energy-from-waste as a source of RE, some countries in the European Union did. He pointed out that there were several technologies through which energy could be recovered from waste. He however pointed out that it would be for the Government to decide whether energy-from-waste should be categorized as RE and whether this option should be adopted in Hong Kong. DSETW(E)1 concurred with the Chairman that energy-from-waste should be regarded as alternative energy rather than RE, as

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affirmed by the Secretary for the Environment, Transport and Works at an earlier Panel meeting. He said that the Study had taken into account different forms of energy, including new and renewable energy as well as alternative energy, in setting out the proposed targets on electricity contribution. The findings and recommendations of the Study would be subject to public consultation over a period of two months. If the general consensus of the community was to exclude energy-from-waste in Table 2 of the Executive Summary of the Study regarding the projected contributions from local RE sources, he would have no problem in doing so and revise the proposed targets accordingly.

13. Noting that it was a common trend in USA and European countries to derive energy from waste, Ir Dr Raymond HO enquired about the Administration's position on energy-from-waste and if it was prepared to go along with the international trend in developing energy-from-waste so as to resolve the problem of waste disposal. In reply, DSETW(E)1 stressed that the Administration did not have any preference over any particular RE technologies and had not yet taken a decision on the options to be adopted. As regards waste disposal, DSETW(E)1 advised that in response to the Government's invitation on the expression of interest exercise on large scale waste management facilities in April 2002, 59 submissions had been received. An Advisory Group, comprising mainly non-officials, was now assessing these submissions taking into account their cost effectiveness, public acceptability, environmental impact, engineering feasibility etc before consulting the public on the way forward. Ir Dr HO reminded the Administration that measures should be taken to prolong the lifespan of the landfills. Ms Miriam LAU added that consideration should be given to making good use of landfill gas from landfills.

14. Mr LAU Ping-cheung held the view that energy-from-waste was a source of energy regardless whether it should be categorized as alternative energy or RE. Besides, energy-from-waste could help reduce waste. He then enquired about the progress of the pilot project on Integrated Co-Combustion Cement Production Facility to be launched by the Green Island Cement Company to turn its cement plant in Tuen Mun to a waste burning facility. As the subject had already been discussed at the last meeting on 14 January 2003, the Chairman instructed that the current discussion be confined to the development of RE.

Biomass

15. Mr James CHAN/CDM explained that the energy from biomass used in USA and European countries referred mainly to use (e.g., combustion) of energy crops. In view of scarcity of agricultural land in Hong Kong, it was not practical to derive energy from this option.

Targets of RE contribution to electricity demand

16. Given the optimistic estimate that electricity generated by photovoltaic systems could meet about 17% of Hong Kong's annual electricity demand,

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Ms Cyd HO queried the consultant's rationale for setting a low target of 3% by 2022 for local RE contribution to annual electricity demand. Mr James CHAN/CDM said that according to the overseas experience, there were significant constraints to the development of RE. By way of illustration, the use of wind and solar energy in USA was estimated to only contribute to 1% and 0.05% respectively of its energy demand in 2020. In European Union, the estimated contribution from RE systems in 2010 was 22%, of which half were expected from large scale hydroelectric systems, one-tenth was from wind power systems and a minor proportion was from photovoltaic systems. The Chairman opined that the consultancy study should focus on the feasibility of RE development in Hong Kong based on its unique situation rather than overseas experience.

17. As to whether the Administration was prepared to accept the low target of local RE contribution, DSETW(E)1 reiterated that the Administration had yet to formulate its position on the consultant's report and would come up with a proposed strategy after the public consultation. Public acceptability and the propriety of legislative amendment to enable the development of RE would need to be looked into. He agreed to the need for setting a practical and achievable target taking into account the potentials and constraints in developing RE in Hong Kong.

Pricing of power supply

18. Dr LO Wing-lok noted from the findings of the Study that the electricity generation cost of conventional fossil fuel power generation technologies currently adopted in Hong Kong did not include an environmental cost. As a result, power generated by conventional fossil fuel appeared to be much cheaper than that by more environmentally friendly RE. In order to gain public acceptance on the development of the more expensive RE, Dr LO opined that the public should be apprised of the environmental costs incurred from using conventional fuel. He then enquired about the maximum percentage of energy contribution that could be derived from local RE sources, adding that it might be more worthwhile to consider other alternatives if the percentage was too low. DSETW(E)1 agreed that there were cost implications in developing RE and the extra cost in developing RE might have to be absorbed by the users and/or the public purse directly or indirectly.

19. While recognizing that it might not be cost effective in developing RE given the high financial outlay and minimal contribution, Ms Cyd HO said that there were environmental gains associated with the use of RE. Therefore, a separate set of policy objectives, apart from cost considerations, should be devised for the development of RE. The Chairman added that the electricity generation cost of RE would be lowered if it was developed on a larger scale. On the other hand, the electricity generation cost of fossil fuel would be increased if more stringent emission standards were imposed. DSETW(E)1 said that the Administration would need to strike a balance in developing RE. Apart from cost consideration, technical feasibility as well as land, building and other requirements had to be taken into account.

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20. In response to Dr LAW Chi-kwong's question on management of the different energy consumption levels between day and night time, CE(EEO) noted that it was common for hydroelectricity and nuclear power plants to use pump storage system under which excessive energy generated during night time would be used to pump water for regenerating hydroelectricity in the day time when the energy consumption level was higher. However, the potential of developing hydroelectricity in Hong Kong was limited given the lack of water resources. He nevertheless pointed out that the China Light and Power Company did charge a lower tariff for electricity consumed during night time although the difference was small.

21. As regards the opportunity cost and cost effectiveness of applying emissions trading for RE, DSETW(E)1 said that these issues could only be examined after the Mainland and the Special Administrative Region governments had sorted out the feasibility for implementing a pilot plan on emissions trading.

**V. Any other business**

22. There being no other business, the meeting ended at 5:30 pm.

Council Business Division 1  
Legislative Council Secretariat  
21 February 2003