

**立法會**  
**Legislative Council**

LC Paper No. CB(1) 2307/01-02  
(These minutes have been seen  
by the Administration)

Ref : CB1/PL/EA/1

**LegCo Panel on Environmental Affairs and  
LegCo Panel on Health Services**

**Minutes of joint meeting  
held on Thursday, 23 May 2002, at 4:30 pm  
in Conference Room A of the Legislative Council Building**

**Members present** : Members of the LegCo Panel on Environmental Affairs

Hon CHOY So-yuk (Chairman)  
Ir Dr Hon Raymond HO Chung-tai, JP  
Hon WONG Yung-kan  
Hon LAU Kong-wah  
Hon Miriam LAU Kin-ye, JP  
Hon Abraham SHEK Lai-him, JP  
Hon Henry WU King-cheong, BBS  
Hon Tommy CHEUNG Yu-yan, JP  
\* Hon Michael MAK Kwok-fung  
Hon Audrey EU Yuet-mee, SC, JP

Members of the LegCo Panel on Health Services

Hon Mrs Sophie LEUNG LAU Yau-fun, SBS, JP (Chairman)  
Dr Hon LO Wing-lok (Deputy Chairman)  
Dr Hon YEUNG Sum

**Members absent** : Members of the LegCo Panel on Environmental Affairs

\* Hon Cyd HO Sau-lan (Deputy Chairman)  
Hon Martin LEE Chu-ming, SC, JP  
\* Hon CHAN Yuen-han, JP  
Hon SIN Chung-kai  
Hon Emily LAU Wai-hing, JP  
\* Hon LAW Chi-kwong, JP

Hon LAU Ping-cheung

Members of the LegCo Panel on Health Services

Hon CHAN Kwok-keung  
Hon Andrew CHENG Kar-foo  
Dr Hon TANG Siu-tong, JP  
Hon LI Fung-ying, JP

(\*Also members of the LegCo Panel on Health Services)

**Public officers attending** : Environment and Food Bureau

Mr Donald TONG  
Deputy Secretary (B)

Ms Annie CHOI  
Principal Assistant Secretary (B)2

Environmental Protection Department

Mr Conrad LAM  
Principal Environmental Protection Officer

Dr David HA  
Acting Principal Environmental Protection Officer

Department of Health

Dr Thomas CHUNG  
Principal Medical and Health Officer

Hospital Authority

Dr CHOY Khai-meng  
Executive Manager (Professional Services)

Consultant

Mr William K TOWNEND  
Chairman  
Working Group on Healthcare Waste  
International Solid Waste Association

**Attendance by  
invitation**

: Hong Kong Private Hospitals Association

Ms Manbo MAN  
Matron (Hong Kong Sanatorium Hospital)

Conservancy Association

Dr Gordon NG  
Chief Executive

Greenpeace

Ms Miranda YIP  
Campaigner

Kwai Tsing District Council

Mr LUI Ko-wai  
District Councillor

Mr WONG Bing-kuen  
District Councillor

Fai In Environmental Service Company

Mr TAM Chi-wah  
General Manager

Hong Kong Safety Clinical Waste Treatment Ltd.

Mr CHENG Ka-ho  
Director Manager

Kam Ming E.P. Engineering Co. Ltd.

Ms CHAN Lai-sheung  
Manageress

Ms CHEUNG Wan-chi  
Manageress

Tsang Lik Services Ltd.

Mr Steve CHAN Siu-pui  
Operations Manager

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

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

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## **I Election of Chairman**

Nominated by Mrs Sophie LEUNG and seconded by Dr YEUNG Sum, Miss CHOY So-yuk was elected Chairman of the joint meeting.

## **II Confirmation of minutes of meeting**

(LC Paper No. CB(1) 1768/01-02 — Minutes of the joint meeting of the Environmental Affairs Panel and the Health Services Panel held on 20 March 2002)

2. The minutes of the joint meeting held on 20 March 2002 were confirmed.

## **III Clinical Waste Control Scheme**

### Meeting with Hong Kong Private Hospitals Association

3. Ms Manbo MAN said that HKPHA agreed in principle to the Administration's proposal of treating clinical waste by incineration at the Chemical Waste Treatment Centre (CWTC) on the understanding that only the operating cost but not the capital cost of CWTC would be recovered.

### Meeting with Conservancy Association (CA)

(LC Paper No. CB(1) 1782/01-02(01) -- Submission from CA)

4. Dr Gordon NG briefed members on the submission from CA. While agreeing that the current disposal of clinical waste at landfills was not satisfactory, CA held the proposed use of CWTC as an immediately available facility to treat clinical waste should only be regarded as a short-term solution. In the long run, the Administration should work out a comprehensive clinical waste management strategy which was in line with the latest development in treatment technologies worldwide. Referring to the study report entitled "Review of Alternative Technologies for the Treatment of Clinical Waste" (the Review) prepared by the Environmental Protection Department (EPD), Dr NG pointed out that it did not provide sufficient information on each alternative

technology to facilitate the making of an informed decision on the treatment option to be adopted in the longer term.

Meeting with Greenpeace

(LC Paper No. CB(1) 1782/01-02(02) -- Submission from Greenpeace)

5. Ms Miranda YIP drew members' attention to the submission from Greenpeace. She said that Greenpeace was strongly opposed to the Clinical Waste Control Scheme (CWCS), inter alia, the proposal to incinerate clinical waste at CWTC. As waste incineration had been linked to severe public health threats, Greenpeace held the view that the Administration should adopt less polluting non-incineration alternatives in waste management. Referring to the Stockholm Convention (SC) which aimed to eliminate the production of persistent organic pollutants (POPs) worldwide, Ms YIP said that signatories to SC had the obligation to continually minimize and ultimately eliminate all sources of POPs.

Meeting with Kwai Tsing District Council (KTDC)

(LC Paper No. CB(1) 1782/01-02(03) -- Submission from KTDC)

6. Mr LUI Ko-wai said that KTDC had passed a motion at its meeting on 9 May 2002 objecting to the Administration's proposal to use CWTC to treat clinical waste. He queried whether CWTC could be retrofitted to treat clinical waste to an acceptable standard. He pointed out that there were two occasions in November 1998 and February 1999 when the level of dioxin emission from CWTC had exceeded the permitted limits. He said that residents of Tsing Yi were concerned that the problem of dioxin emission would exacerbate if CWTC were used to treat clinical waste as well as the dioxin-contaminated residue from Cheoy Lee Shipyard (CLS) at Penny's Bay in addition to chemical waste.

7. Referring to an earlier meeting with the LegCo Panel on Environmental Affairs regarding the decommissioning of CLS, Mr WONG Bing-kuen said that KTDC members had already expressed their concerns about dioxin emissions from the treatment of contaminated soil from CLS. He stressed that a cautious and preventive approach should be adopted to minimize the impact of dioxin on the environment. He therefore urged the Administration to consider alternative means to treat clinical waste taking into account the concerns of Tsing Yi residents.

Meeting with Fai In Environmental Service Co

8. While acknowledging that a code of practice for the management of clinical waste by waste collectors and producers had been worked out, Mr TAM Chi-wah pointed out that there was yet no established channel through which effective communication within the trade could be enhanced. He also emphasized the need for consultation with the trade on implementation details and charging arrangement.

Meeting with Hong Kong Safety Clinical Waste Treatment Ltd

9. Mr CHENG Kar-ho expressed concern that the proposed setting up of collection points and the provision of mobile collection service might jeopardized the business of waste collectors. He also hoped that control over collection and transport of clinical waste be stepped up on account of its safety hazard.

Meeting with Kam Ming E.P. Engineering Co Ltd

10. Given the infectious nature of clinical waste, Ms CHAN Lai-sheung suggested that the Administration should provide proper training to workers on the safe collection and transport of clinical waste to enhance protection for these workers.

Meeting with Tsang Lik Services Ltd

11. Mr Steve CHAN pointed out that as most private clinics were situated in busy commercial districts, there was a need to ensure that the transport and collection of clinical waste would not pose hazard to public safety. Measures should be put in place to ensure compliance with the guidelines on the storage and handling of clinical waste.

12. Members also noted the following submissions from organizations not attending the meeting-

- (a) LC Paper No. CB(1) 1782/01-02(04) -- Submission from the Green Power
- (b) LC Paper No. CB(1) 1782/01-02(05) -- Submission from the Friends of the Earth
- (c) LC Paper No. CB(1) 1782/01-02(06) -- Submission from the Hong Kong Dental Association
- (d) LC Paper No. CB(1) 1782/01-02(07) -- Submission from the Hong Kong Medical Association

Meeting with the Administration

(LC Paper No. CB(1) 1323/01-02(02) -- Information paper provided by the Administration for the joint meeting on 20 March 2002

LC Paper No. CB(1) 1782/01-02(08) -- Updated background brief prepared by the Legislative Council Secretariat

LC Paper No. CB(1) 1782/01-02(09) -- Information paper provided by the Administration )

13. With the consent of the Chairman, the Deputy Secretary for the Environment and Food (B) (DSEF(B)) took the opportunity to respond to some of the points raised by

the deputations. While acknowledging the importance of waste reduction, he said that there was an urgent need to set up a scheme for the treatment of clinical waste since the current disposal of clinical waste at landfills was not only far from satisfactory but also posed a threat to public health. In an attempt to identify the best treatment option, EPD had conducted a review of the various treatment technologies by summarizing the previous reviews carried out by both the Government and the Hospital Authority (HA). Factors such as health and environmental impacts, efficacies in killing infectious microorganisms, operational safety, reliability and ease of maintenance, handling of residues, time-table for implementation etc., had been taken into consideration. It was found that apart from incineration, all other alternative treatment technologies had limitations in the extent to which clinical waste could be treated. It was therefore recommended that incineration be adopted to treat clinical waste, and that CWTC be modified to treat clinical waste in an environmentally acceptable manner. The recommendation was supported by medical and dental associations. DSEF(B) nevertheless agreed with the deputations that incineration of clinical waste at CWTC should be a medium-term solution. The Administration would keep abreast of international developments and would not preclude the option of alternative treatment in the longer term.

#### Review of Alternative Technologies for the Treatment of Clinical Waste

14. Referring to Chapter 3 of the Review which set out the previous reviews of clinical waste treatment technologies carried out by both the Government and HA, Mrs Sophie LEUNG pointed out that the Review did not reflect the actual sentiment of HA on the application of alternative technologies. She recalled that HA had adopted a proactive attitude towards the application of alternative technologies for the treatment of clinical waste. However, the Review was totally in favour of incineration and did not support the use of alternative technologies. She said that there might be a need for those HA representatives who had participated in the previous review to attend the meeting to offer their views. The Acting Principal Environmental Protection Officer explained that paragraphs 3.4 to 3.7 of the Review summarized the outcome of the consultancy report commissioned by HA in 1998. The report indicated that there were limitations in using autoclave because it did not provide a total solution for all types of clinical waste.

15. Mrs LEUNG enquired about HA's position on the use of alternative technologies. The Executive Manager (Professional Services)/HA said that HA was keen to identify an environmentally acceptable way to treat clinical waste. It had invited experts in the environmental field to conduct briefings on the latest technologies in the treatment of clinical waste. Although new technologies were emerging, it would take time for them to be developed and put to use. The technology of incineration was well-developed and could provide solution to the disposal of clinical waste. HA therefore supported the Administration's proposal. In consultation with EPD, it would keep abreast of the latest technologies such as autoclaving and plasma-based systems. Efforts would be made to reduce and segregate clinical waste. He also undertook to provide for members' reference the consultancy report commissioned by HA.

16. On CWCS, DSEF(B) said that the views of major users, including HA, Department of Health and private hospitals, were sought in the compilation of the Review and in formulation of the CWTC option. The Administration had compared the pros and cons of different treatment options and their applicability to the Hong Kong situation before arriving at the proposed option. The proposed CWCS would provide the needed improvements to the existing disposal arrangements. Notwithstanding, the Administration, would continue to keep in view the latest advancement in technology and review the treatment methods for clinical waste.

#### Review of Clinical Waste Treatment Technologies

17. Mr William TOWNEND, Chairman of the Working Group on Healthcare Waste, explained the findings of his Report on Review of Clinical Waste Treatment Technologies (the Report) (Appendix D to LC Paper No. CB(1) 1323/01-02(02)). He said that unlike incineration which was governed by comprehensive international standards developed over the years, alternative and novel technologies were currently regulated in the United States and the United Kingdom using efficacy standards which were not internationally accepted. Regulatory regimes for alternative technologies would take a long time to develop. When considering a new clinical waste control scheme, there was a need to ensure that the treatment technology to be adopted was well proven. He had therefore come to the conclusion that incineration be used in treating clinical waste in Hong Kong, and that CWTC be modified to treat clinical waste as soon as possible since the current disposal of untreated clinical waste at landfills was not acceptable.

18. The Chairman enquired if new alternative technologies had emerged during the interim since the Report was completed in November 2000. Mr TOWNEND said that the Report had provided up-to-date information on the novel technologies such as gasification, pyrolysis and plasma systems. Meanwhile, there had only been limited advancement in thermal, radioactive and autoclave treatment technologies. The analysis and recommendations in the Report thus remained valid and updated.

19. Referring to paragraph 6.4 of the Report which stated that “the introduction of alternative technologies into other industrialized countries is growing due to increasing demand by the public for tightening emission standards”, Dr Gordon NG/CA pointed out that there was a trend for identifying alternative technologies in the longer term despite that incineration was still adopted by many countries. Ms Miranda YIP/Greenpeace opined that the Administration had a bias towards the incineration option even though paragraph 7.4.9 of the Report indicated that autoclaving was worthy of support. Through the chair, the Principal Assistant Secretary for the Environment and Food (PAS/EF(B)2) clarified that para 7.4.9 recommended that while the Government should proceed with the modification of CWTC, it should also carefully consider alternative technologies for treatment of clinical waste in the longer term. The Administration accepted the recommendation and the current proposal was built on this recommendation.



### Comparison of different treatment options

20. Mr Henry WU enquired about the differences among incineration, pyrolysis and gasification, in respect of level of dioxin emission and treatment cost. PAS/EF(B)2 explained that all the three options involved the use of high temperature but used different levels of oxygen in the process. In fact, similar to incineration plants, pyrolysis and gasification plants also consisted of after-burn units to incinerate the residual waste. The level of dioxin emission would depend on the content of waste and the treatment temperature, which had to be carefully adjusted to prevent the reformation of dioxin during and after the process. Pollution control devices were required to effectively reduce pollutants. As regards treatment cost, PAS/EF(B)2 said that since there were only a few small-scale pyrolysis or gasification plants in use, it might not be possible to provide a cost comparison on the different treatment options. DSEF(B) added that while treatment cost was one of the factors to be considered, it was not the overriding factor in deciding on the choice of option.

21. Dr YEUNG Sum sought Mr TOWNEND's views on the acceptability of incineration technology which had been said to be phased out by signatories to SC. Mr TOWNEND said that there did not appear to be a trend to ban incineration which was still commonly used by many countries. By way of illustration, Sweden was a signatory to SC but over 60% of its municipal solid waste were incinerated with energy recovery and there was no intention of changing the strategy. In fact, clinical waste was being treated in municipal incinerators in most parts of northern Europe. Incineration was also used by the only one autoclaving plant in the United Kingdom to treat the steamed waste. The United Kingdom would be increasing the use of incineration to treat municipal solid waste. Notwithstanding, old type incinerators that could not meet the stringent emission standard were being phased out, and alternative technologies were being explored.

22. As to whether signatories to SC had the obligation to avoid incineration, Mr TOWNEND said that the aim of SC was to eliminate the production and the use of POPs, including dioxin which would arise in many ways apart from incineration of municipal solid waste. With the advancement in technology, the level of dioxin emission from incineration had been considerably reduced. European countries supported SC and would implement waste strategies to reduce dioxin emissions but there was no intention to ban incineration. DSEF(B) said that while SC had been signed by a number of countries, including China, it had yet to be ratified and hence its applicability to Hong Kong remained uncertain at this stage. Besides, SC had clearly agreed that incineration could be adopted if there were no other available alternatives. This was in fact the approach which Mr TOWNEND had adopted in conducting his review. He had made a detailed comparison on all treatment options before arriving at the recommended option of using incineration to treat clinical waste in Hong Kong. PAS/EF(B)2 added that according to SC, there should not be open burning or other forms of uncontrolled incineration of waste. Where incineration was required, it had to be carried out in an appropriate manner to minimize POPs. As CWTC was equipped to treat waste in an environmentally acceptable manner, it would not create a hazard to the surrounding environment.

23. Ms Miranda YIP/Greenpeace did not agree with Mr TOWNEND that there had not been a trend for banning incineration, and that incineration would continue to be used by many countries. She pointed out that a number of incineration plants had been closed down in many parts of the world such as France, Poland, Argentina, South Africa and United States. She queried how the Administration could rationalize the use of CWTC to treat clinical waste as this was in contravention of the spirit of SC. Through the chair, DSEF(B) said that the Administration had abided by SC in making the recommendation for the incineration option. It would keep abreast of the latest development in treatment technologies for clinical waste. He also pointed out that the closure of incineration plants referred to might not be directly related to SC. PAS/EP(B)2 supplemented that in France, 40 000 tonnes of clinical waste were incinerated in purpose-built facilities each year, 90 000 tonnes were incinerated together with other municipal waste in municipal incinerators whereas only 20,000 tonnes were treated by autoclaving. Meanwhile, all clinical waste were incinerated in Germany.

#### Use of CWTC for treatment of clinical waste

24. Noting that an Environmental Impact Assessment (EIA) on the suitability of CWTC to treat clinical waste had been completed, Dr LO Wing-lok asked if the Administration had informed Tsing Yi residents of the mitigating measures that had been taken to allay their concerns. DSEF(B) advised that since its commissioning in 1993, CWTC had been operating to the highest international standards. Monitoring of flue gas indicated that the level of dioxin emission from CWTC was way below the most stringent international emission limit of 0.1 ng I-TEQ/m<sup>3</sup>. The monitoring results had been made available regularly to KTDC in an attempt to allay its concerns about dioxin emissions. The Principal Environmental Protection Officer (PEPO) added that the CWTC was an available facility that could treat clinical waste in an environmentally acceptable manner. As to whether the level of pollution would rise if clinical waste was incinerated at CWTC in addition to chemical waste, PEPO said that as the chlorine content in clinical waste was minimal, the level of dioxin generated from incineration would be low.

25. Mr LUI Ko-wai/KTDC however pointed out that CWTC was not intended for treating clinical waste, modification was therefore necessary in order that the facility could be used for such a purpose. Noting from Table 2 of Annex C to LC Paper No. CB(1) 1782/01-02(09)) that the dioxin concentration of stack emission from CWTC in 2001 had exceeded the level in 2000, Mr LUI expressed concern that the emission level would surge as a result of incineration of clinical waste at CWTC. He enquired about the measures that would be adopted to prevent the reformation of dioxin in the treatment process when the temperature was between 200 to 400 °C. He also considered it necessary for the Administration to put in place measures to address the risk arising from the transportation of infectious waste to CWTC.

26. Through the chair, DSEF(B) said that the proposed modification of CWTC was in relation to reception of the clinical waste. No modification of the air pollution control units was necessary for treating the clinical waste. As regards the dioxin concentration of stack emission from CWTC, DESEF(B) pointed out that the average levels in 2000 and

2001 were 0.0085 and 0.0075 ng I-TEQ/m<sup>3</sup> respectively, both of which were way below the control limit of 0.1 ng I-TEQ/m<sup>3</sup>. He regretted that the emission levels for March and October 2001 were not available due to contamination of samples. Suitable adjustments had since been made to the timing for collection of samples to avoid similar recurrence. Given that no incidents of failure had occurred in the transport of chemical waste which was in a far greater amount than clinical waste, DSEF(B) remarked that there would unlikely be any hazard associated with the transport of clinical waste to CWTC, particularly when additional precautionary measures would be taken in the handling of clinical waste. On the concern about reformation of dioxin, DSEF(B) assured members that the quenching system in CWTC was very effective in reducing the temperature to below 200 °C, thereby preventing the reformation of dioxin. He welcomed KTDC members to visit CWTC to see for themselves how the actual system operated. PAS/EF(B)2 added that gas cleaning systems comprising dual activated carbon injectors, spray dry absorbers and fabric filter bags were installed in CWTC to provide additional safeguard to remove contaminants in the flue gas, if any, before it was emitted into the air.

Admin

27. The Chairman asked if the Administration had conducted a trial on the incineration of clinical waste at CWTC. PAS/EF(B)2 confirmed that this was carried out in 1996. The outcome of the trial was incorporated into the EIA report which was submitted to the Advisory Council on the Environment (ACE) in 2000. The recommendations of the Review were endorsed by ACE in April 2002. At members' request, the Administration agreed to provide the results of the trial study. Given the concern of Kwai Tsing residents on the health impact of CWTC, the Chairman opined that consideration should be given to decommissioning CWTC in the event that a new incineration facility would be built in To Kau Wan to treat the residue of dioxin-contaminated soil at CLS. As plans for the treatment facility at To Kau Wan had yet to be finalized, DSEF(B) said that it would be too early to comment on whether the facility could be used to replace CWTC. Dr YEUNG Sum asked if the Administration would submit the funding proposal for modification of CWTC to the Finance Committee within the current LegCo session despite the strong opposition from KTDC. DSEF(B) said that the Administration intended to seek funding of \$51 million from LegCo in the last quarter of 2002 so that modification works for CWTC could proceed in 2003 for treating clinical waste in 2004.

### Management of clinical waste

28. Dr LO Wing-lok concurred with waste collectors on the need to establish communication channels to ensure effective operation of CWCS. He supported the setting up of a committee comprising representatives from the Administration, waste collectors, medical and dental sectors to review CWCS on a regular basis. He also considered that training courses on the handling and transport of clinical waste should be provided. DSEF(B) said that the Administration had issued a consultation document, together with two draft codes of practice for waste collectors and waste producers which set out the safety measures of clinical waste collection. Since CWCS would not be implemented until 2004, waste collectors were welcomed to submit their views to the Administration for consideration. In association with EPD, the Occupational Safety and

Health Council had been providing training to workers engaged in the transport and collection of clinical waste. Communication with stakeholders would also be enhanced. It was the Administration's intention to work out a comprehensive cradle-to-grave scheme for the safe collection, transport and treatment of clinical waste. PAS/EF(B)2 added that as part of CWCS, a statutory licensing framework would be established to regulate the handling of clinical waste by collectors and disposal facility operators. This would ensure proper handling and collection of clinical waste.

29. Mrs Sophie LEUNG expressed concern about the safe handling of clinical waste, human tissues and body parts in particular. Her concern was shared by the Chairman and Mr Henry WU who stressed the need for proper handling and storage of clinical waste. PEPO advised that clinical waste would be packed in heavy duty non-PVC plastic bags effectively sealed to prevent spillage. The waste would then be placed in sealed leak-proof containers, the design of which would follow the specifications as set out in the Code of Practice. The containers would be exchanged at CWTC and properly sterilized while the used bags would be incinerated.

#### **IV Any other business**

30. There being no other business, the meeting ended at 7:05 pm.

Legislative Council Secretariat  
19 July 2002