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Panel on Environmental Affairs

Meeting on 22 February 2010

Updated background brief on Clinical Waste Control Scheme prepared by the Legislative Council Secretariat (Position as at 12 February 2010)

Purpose

This papers sets out the development of the Clinical Waste Control Scheme, and gives a brief account of the views and concerns expressed by the relevant Panels.

Introduction

2 Clinical waste is waste arising from practice or research for dental, medical, nursing, veterinary, pathological/testing or pharmaceutical purposes. This mainly includes used or contaminated sharps like syringes/needles, laboratory wastes, human and animal tissues/organs, infectious materials from patients and surgical dressings. Clinical waste is potentially infectious and bio-hazardous, and if not properly handled will pose serious health risks. However, there is no specific requirement for the collection and disposal of clinical waste. Most clinical waste is disposed of at landfills without treatment.

Clinical Waste Control Scheme

3. To safeguard public health and safety, the Administration announced in October 1997 its intention to introduce a clinical waste control scheme to control the handling, collection and disposal of clinical waste for consultation with the stakeholders. It was proposed that legislative control on major clinical waste producers (i.e. hospitals, maternity homes and Government clinics) should be the first step to tackle the issue, while control on small clinical waste producers (such as private medical, dental and veterinary clinics and laboratories) could be held in abeyance if they could demonstrate a satisfactory level of control through self-regulation. The collected clinical waste should be disposed of at the Chemical

Waste Treatment Centre (CWTC) in Tsing Yi. According to the Administration, 32 organizations covering the medical, dental, pharmaceutical and veterinary sectors, tertiary and research institutions as well as the waste collection trade had been consulted. Although reaction to the scheme was mixed, the major clinical waste producers were generally supportive of the arrangements.

4. When the proposed scheme was examined by the Panel on Environmental Affairs and the Panel on Health Services, interested parties, including Greenpeace, had been invited to express their views. The Panels noted that Greenpeace was strongly opposed to the control scheme, inter alia, the proposal to incinerate clinical waste at CWTC since waste incineration was a leading source of both dioxin and mercury pollution. They suggested that efforts, such as using more reusable items, minimizing packaging and buying products that were durable rather than disposable, should be made to reduce clinical waste. Consideration should be given to exploring other alternative treatment technologies, including autoclaving, microwave systems and chemical disinfection equipment, that could sterilize and reduce the volume of medical waste without incineration.

5. Consequently, the Environmental Protection Department (EPD) engaged Mr William TOWNEND, an international expert on clinical waste management, to study available treatment technologies worldwide, review international practices, and advise on the application of such technologies in Hong Kong. The report on "Review of Alternative Technologies for the Treatment of Clinical Waste" was published in December 2000. The report recommended that the Government should adopt high-temperature incineration as a medium-term clinical waste treatment option, but in the longer term, the Government should keep abreast of the development in various technologies alternative to incineration.

The revised Control Scheme

6. In view of increasing public concern over the potential risks associated with improper handling of clinical waste, the Administration completed the review of the control on collection of clinical waste in 2001. To better safeguard public health and safety, the Administration proposed to adopt a more robust collection system which would extend legal control to all major and small clinical waste producers simultaneously, requiring them to segregate properly clinical waste from other wastes and to arrange for disposal of the waste.

7. The revised proposal for the control of the collection and disposal of clinical waste as well as the outcome of the review of treatment technologies were discussed by the Panels at a joint meeting on 20 March 2002, during which deputations were invited to express their views. Members noted that the revised Control Scheme comprised the following key elements -

(a) establishing a statutory licensing framework for all clinical waste collectors and operators of disposal facilities;

(b) requiring clinical waste producers to properly manage their clinical waste by segregating those from other municipal solid waste and consigning the clinical waste to licensed clinical waste collectors for disposal;

(c) promulgating Codes of Practice to provide guidance for major clinical waste producers (i.e. hospitals), waste collectors and small waste producers (i.e. clinics and medical laboratories etc) on segregation, packaging, labeling, collection, storage, transportation and disposal of clinical waste;

(d) setting up a trip-ticket system to track clinical waste from source to disposal facility; and

(e) designating CWTC in Tsing Yi as the facility to treat clinical waste and levying a disposal charge on clinical waste producers for use of the facility.

8. While agreeing that the current disposal of clinical waste at landfills was not satisfactory, there was grave concern on the proposal to incinerate clinical waste at CWTC. Given that there were two occasions in November 1998 and February 1999 where the level of dioxin emission from CWTC had exceeded the permitted limits, query was raised on whether CWTC could be retrofitted to treat clinical waste to an acceptable standard. The Administration was urged to adopt less polluting non-incineration alternatives in waste management. In addition to the promulgation of the Codes of Practice, there was a need to establish a channel to enhance effective communication with the trade. Consideration should also be given to providing proper training to workers on the safe collection and transport of clinical waste in view of the infectious nature of such waste.

9. In June 2003, the Administration introduced the Waste Disposal (Amendment) Bill 2003 to legislate for control on the handling of clinical waste. The Bill was lapsed at the end of the LegCo term on 30 September 2004.

Assessment of dioxin emissions in Hong Kong

10. In deciding the way forward on waste incineration, the Administration commissioned a consultancy study on dioxin emissions and the health risks associated with dioxin emissions in Hong Kong. An independent international expert was also invited to review the consultant's assessments.

11. The consultant's report on dioxin emissions in Hong Kong was examined by the Environmental Affairs and the Health Services Panel in May 2000. It revealed that -

(a) ambient dioxin concentration in Hong Kong was comparable to the levels in many urbanized cities;

(b) dioxin emissions had been reduced over the past few years with the decommissioning of old municipal waste incinerators;

(c) less than 2% of human dioxin intake was from direct inhalation;

(d) contribution to dioxin in food from local emissions was insignificant as food items were mainly imported into Hong Kong;

(e) CWTC contributed only about 0.1% to 0.4% to the background dioxin level;

(f) incineration of clinical waste at CWTC was not likely to increase the background concentration of dioxins to any significant extent if the current emission and combustion practices were adopted;

(g) additional monitoring of dioxins should be conducted on soil, dust and vegetation in the vicinity of the existing and future facilities on a biannual basis;

(h) a food surveillance programme should be implemented on imported and locally produced food; and

(i) no incineration facility should contribute more than 1% to the background ambient air concentration of dioxin on an annualized basis and detailed checks on the operation and control measures in incineration facilities should be carried out when the dioxin levels reaches two nanogramme I-TEQ per cubic metre of emission.

The independent reviewer generally agreed with the findings of the consultant, adding that diet was the most important route for exposure to dioxin, which accounted for 90% to 98% of dioxin intake according to overseas findings. He also concurred that the dioxin emissions in Hong Kong complied with the tolerable range proposed by the World Health Organization (WHO), that the records on ambient air values in Hong Kong were comparable to many other countries, and that there was a need to fill the information gap on dietary intake of dioxin in Hong Kong.

12. While appreciating that the report had provided useful data on dioxin emissions in Hong Kong, the Panels held the view that the Administration should explore other alternatives to incineration. Members also agreed that the information on waste management facilities, including clinical waste incineration, in the report had to be considered in the context of the overall waste management strategy, and that any major waste management proposal should be subject to comprehensive environmental impact assessment.

13. As regards the concern on the lack of comprehensive data on dioxin levels in food consumed in Hong Kong, the Panels noted that consideration was being given to introducing a comprehensive food monitoring programme to categorize and test the food consumed by Hong Kong people. This would be a difficult exercise as most of the food items were imported in Hong Kong and the sources changed frequently.

Subsequent development

14. In 2000, the Food and Environmental Hygiene Department (FEHD) conducted a food consumption survey in local secondary school students to obtain consumption data on individual food items using a food frequency questionnaire. Using data from the survey, a dietary exposure study to dioxins of secondary school students was carried out in 2002. Dietary exposure to dioxins for an average secondary school student was estimated to be 0.85 pg WHO-TEQ/kg bw/day, while that for high consumers was 2.07 pg WHO-TEQ/kg bw/day. Both levels fell within the Tolerable Daily Intake Limit (1-4 pg WHO-TEQ/kg bw/day) established by WHO in 1988, suggesting that secondary school students in Hong Kong were unlikely to experience toxicological effects of dioxins. Given the general lack of local food consumption data on the population level, FEHD initiated a population-based food consumption survey in 2005. Based on the results of the survey, a more accurate assessment of dietary exposure of local residents to persistent organic pollutants, including dioxin, will be performed at the population level.

15. In May 2005, the Administration introduced the Waste Disposal (Amendment) Bill 2005. The Bills Committee formed to scrutinize the Bill had held 13 meetings with the Administration and received views from 29 deputations. In the course of deliberation, members examined issues relating to the designation of CWTC for treatment of clinical waste, categorization of clinical waste, responsibilities of various parties in the clinical waste management chain and penalties under the Control Scheme, record keeping, charges on disposal of clinical waste, collection service, fee and validity of clinical waste collection licence, training programme as well as grace period. The report of the Bills Committee is hyperlinked below for ease of reference. In response to the request of the Bills Committee, the Administration had undertaken to -

(a) consider providing community facilities for the betterment of the environment of the Kwai Tsing district;

(b) allay the concerns of the Kwai Tsing District Council (K&TDC) about treatment of clinical waste at CWTC, and discuss the monitoring proposals with K&TDC at its future meetings;

(c) continue to explore advanced technologies for the treatment of waste and report progress to the Panel on Environmental Affairs in due course;

(d) provide guidelines on the type of information which waste producers were recommended to keep in the Codes of Practice and specify a reasonable period for which waste producers have to keep such information for inspection by the Director of Environmental Protection in the draft Waste Disposal (Clinical Waste) (General) Regulation; and

(e) continue to liaise with the service providers and waste producers to ensure that collection service is available at outlying islands on a regular basis after the enactment of the Bill.

The Bill was subsequently passed at the Council meeting on 29 March 2006. Apart from the provisions relating to the Basel Ban which have come into operation on the day on which the Bill was enacted and published in the Gazette, other provisions shall come into operation on a day to be appointed by the Secretary for the Environment by notice published in the Gazette.

Latest progress

16. The Administration proposes to brief the Panel on the Clinical Waste Control Scheme – subsidiary legislation and Codes of Practice under the Waste Disposal Ordinance (Cap. 354) on 22 February 2010.

Relevant papers

Information papers provided by the Administration for the joint meeting on 20 March and 23 May 2002
http://www.legco.gov.hk/yr01-02/english/panels/ea/papers/eahs0320cb1-1323-2-e.pdf
http://www.legco.gov.hk/yr01-02/english/panels/ea/papers/eahs0523cb1-1782-9-e.pdf

Minutes for the joint meeting on 20 March and 23 May 2002
http://www.legco.gov.hk/yr01-02/english/panels/ea/minutes/ej020320.pdf
http://www.legco.gov.hk/yr01-02/english/panels/ea/minutes/ej020523.pdf

Information papers provided by the Administration for the Environmental Affairs Panel meeting on 27 February 2006
http://www.legco.gov.hk/yr05-06/english/panels/ea/papers/ea0227cb1-950-3-e.pdf

Report of the Bills Committee on Waste Disposal (Amendment) Bill 2005 to the Council meeting on 29 March 2006
http://www.legco.gov.hk/yr04-05/english/bc/bc63/reports/bc630329cb2-1482e.pdf

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