

**Legislative Council
Joint Panel on Health Services and Environmental Affairs
Report on Dioxin Emissions**

Introduction

This paper presents the consultant's report on dioxin emissions in Hong Kong and the independent review of the consultant's findings.

Background

2. At the meeting of the Joint Health Services/Environmental Affairs Panel held on 7 January, 2000, Members were informed of a consultancy study commissioned by the Environmental Protection Department (EPD) to assess the dioxin emissions in Hong Kong, and their impact on public health. Members were also informed that an independent international expert would be invited to review the consultant's assessments.

3. Both the study and the review have been completed. The assessor, Dr Gev Eduljee, has presented his report to the Advisory Committee for the Environment on 17 April 2000, and discussed key issues at a public seminar on 18 April 2000. The assessment report, together with the report of the independent review, have been made available to the public and are enclosed at annexes I and II, respectively.

Key findings of the assessment report

4. The highlights of the findings are as follows

- Hong Kong's ambient dioxin concentration fluctuates seasonally, but is generally of the same order over the territory, and is comparable to the levels in many urbanized cities;
- dioxin emissions have been reduced over the past few years with the decommissioning of old municipal waste incinerators and the adoption of more stringent emission standards for new incineration facilities;
- the Chemical Waste Treatment Centre (CWTC) contributes only about 0.1% to 0.4% to the background dioxin level;

- less than 2% of human dioxin intake is from direct inhalation. A very conservative estimate indicates that the daily dietary dioxin intake by an average person in Hong Kong is 105 pg I-TEQ¹. This is similar to many other countries and falls within the tolerable level of daily intake recommended by the World Health Organisation;
- as food items are mainly imported into Hong Kong, the contribution to dioxin in food from local emissions is insignificant; and
- incineration of clinical waste at the CWTC and the proposed waste-to-energy facilities for treating municipal waste are not likely to increase the background concentration of dioxins to any significant extent if the current emission and combustion practices are adopted.

Consultant's key recommendations

5. The consultant recommends that:

- 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;
- a food surveillance programme should be implemented on imported and locally produced food; and
- no one 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 level reaches 2 nanogramme I-TEQ per cubic metre of emission.

Findings of the independent reviewer

6. The independent reviewer, Professor Rappe, generally agrees with the findings of the consultant. He supplements that:

¹ I-TEQ is the international unit of measurement of dioxin concentration. Dioxin is a family of organic compounds, each having a different level of toxicity. The toxicity is measured relative to the most potent member of the family, known as TCDD. 1 pg I-TEQ means that in a given sample, there is an equivalent amount of one thousand billionth of a gramme of TCDD.

- the higher values of dioxin concentration during winter months as recorded in the monitoring stations should not be attributed to the CWTC;
- there is only limited evidence that one of the 210 congeners of dioxin (technically known as TCDD) is a human carcinogen. The other congeners are not classified as carcinogenic. As TCDD generally contributes to less than 4% of the overall dioxin toxicity, there is very little correlation between incinerator emissions and carcinogenicity;
- any non-occupationally exposed person should not be at a greater risk of developing cancer; and
- co-incineration of chemical and clinical wastes in the CWTC is acceptable. It is unlikely that the released quantities of dioxins from the CWTC, even with the incineration of clinical waste, would be detrimental to human health.

Administration's position

7. The independent study and review have confirmed the safety of current and proposed waste incineration methods. Nonetheless, the Administration is keeping its options open as regards the most suitable bulk waste reduction technologies for municipal solid waste and sewage sludge. We intend to consult Members, and the community at large, after our consultancy study report on bulk waste reduction facilities is available early next year.

8. As regards the disposal of clinical waste, the Administration is mindful of Members' concern about the cost effectiveness of incineration at the CWTC vis-a-vis alternative treatment technologies (such as autoclaving). EPD is reexamining the different options before deciding whether to recommend continuing with the proposal to modify the CWTC.

9. The Administration accepts all the consultant's and the reviewer's recommendations. We are currently studying how best to expand the scope of the existing dioxin monitoring programme to cover soil, dust and vegetation in the vicinity of the incineration facilities. We will continue to conduct surveillance on food products to ensure that the

dioxin level is well within safety limits. We are ready to fund studies by academic institutions or other independent organizations to test the levels of dioxin in the local population. We have been approaching interested parties to develop proposals for a testing programme.

Advice sought

10. Members are invited to comment on the consultant's assessment and the independent reviewer's report. The consultants, Dr Gev Eduljee and Professor J Bridges; and the independent reviewer, Professor Rappe, will attend the meeting to answer questions from Members.

Environment and Food Bureau
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