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The human health impact of the proposed municipal waste incinerator at Ringsend: a critique of the health assessment in the EIS submitted with the planning application.

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My Background

I qualified in medicine in 1984, and after working in paediatrics for five years, I moved to train in academic epidemiology. I have a medical degree, a doctorate in epidemiology, and I am a member of the RCPI, and a fellow of the Faculty of Public Health. I am a member of the International Society for Environmental Epidemiology (ISEE), the premier professional organisation in this field.

I have worked on issues in environmental epidemiology since 1990, and particularly since I moved to work in the Small Area Health Statistics Unit at Imperial College. Since returning to work in Ireland in 1997, I have developed the first environmental epidemiology unit in the country.

I have worked on many environmental health projects in Ireland including the health assessment at Askeaton, the HRB funded report on the health and environmental impact of waste disposal, the human health impact of the uranium contamination at Baltinglass, a baseline health assessment of the proposed incinerator at Ringsend, an EPA funded project on the environmental burden of disease in Ireland, a report on the assessment of the human health impact of illegal landfill sites, a report on the EIS for the proposed incinerators at Carranstown and Ringaskiddy, and a report on the human health assessment in the EIS for the second runway at Dublin airport.

Content of the EIS

The EIS contains several sections addressing health issues. The main discussion is in Chapter 13 'Impact on Human Beings'. The process use to carry out this piece of work is unclear, and no specific justification or rationale is given for it. There is no indication of any scoping exercise having been done to decide what

areas should be addressed, how these should eb addressed, and what level of detail was appropriate for each area.

What is covered in Section 13.3 is a brief description of the local environment, a socio-economic profile from 2002 census data, a list of community facilities, and a brief description of land use and local planning objectives. There follows a section on 'Human Health Issues'. This is a summary of a number of documents on health and incinerator emissions, one of which I wrote. There follows a summary of my report on the existing health of the local community (which is given in full in an appendix). After this is a brief review of some work on dioxins in the Irish environment. This section concludes with a summary of a literature review by Prof. Schenk (also given in full in an appendix).

Other chapters of the EIS report in detail on topics, parts of which might be relevant to health impacts. These are Chapter 8-Air Quality and Climate, Chapter 7-Traffic Management, Chapter 12-Water, and Chapter 16-Architectural, Archaeological and Cultural Impact. In no case is there any serious consideration of the actual impacts of the estimated emissions on people in the local community or on human health. Chapter 9 on Noise, does consider noise as possibly giving rise to complaints, but does not directly assess the impact of noise on the local population.

Health Impact Assessment

I believe that it is both appropriate, necessary, and arguably, required by EU legislation, to properly asses the potential health impact of the operation of large industrial facilities. Put simply, any developer with any interest in preserving the health of the people living near the proposed development will undertake a formal HIA. It is at best careless, and more realistically reckless, to proceed with a major development without considering methods of minimising harm and maximising benefits to the local community from the development. It is worth adding that the costs of remediating design faults are almost invariably far greater than the costs of designing them out in the first place.

By analogy with 'Environmental Impact Statement' the standard term for the suite of methods used to do this is 'Health Impact Assessment' (HIA).

What is HIA?

A combination of methods and tools by which a policy, programme or project may be judged as to its potential effect(s) on the health of a population and the distribution of those effects within the population.

Why use it?

- To ensure that the health consequences of decisions – positive or negative – are not overlooked
- To identify new opportunities to protect and to improve health across the range of policy areas.

- To understand better the interactions between health and other policy areas.

When it can be used?

- In advance of a proposal being implemented (prospective assessment).
- After a programme has finished or after an unplanned event has happened (retrospective assessment).
- At the same time as a proposal is being implemented (concurrent assessment).

What does it comprise?

1. Screening
   (a) Involves considering the relevance to people's health of a specific policy, programme or project and how it might affect it.
2. Scoping
   (a) To determine the focus and extent of the assessment
3. Assessment
   (a) Rapid appraisal or a more detailed study.

HIA's in practice

What does a 'Health Impact Assessment' or HIA look like? Much depends on the scale of the development, as this largely determines the scale of the HIA required. HIA's for a housing estate, a motorway, and an airport runway, for example, would look very different.

In general terms a HIA will have three main sections. The screening report, which justifies carrying out a HIA, will describe in general terms, the possible impacts of a proposed development on human health, and conclude either that a HIA is warranted, or not. This could take one or two weeks, and is a desk exercise.

The next section, the scoping report, applies the general issues in the screening report to the specific situation, of this specific development in the specific site. This section will develop the scale and scope of the assessment, together with stakeholders, such as planners, developers, and members of the local community. This part of the process can take anything from a few days to a few weeks, and determines the scale of the assessment phase.

The final section, the assessment report, is the most variable element of the HIA. The big division is between projects whose assessment can be done as a desk exercise, usually building on other components of the EIS, and projects which require field work with the affected communities. The former are quick, quite cheap, and suitable for many smaller developments. The latter are more complex, and take longer, typically between a few months and a year. However,

for large developments with potentially complex effects, such fieldwork is required.

Critique of the EIS

Overall the human health assessment of the EIS seems very inadequate. Good practice would demand a formal HIA process, and this has not been done. Several very obvious impacts have been ignored, for example odour, exhaust emissions from trucks, sleep disturbance, and the impact on local schools.

The section on the most important issue of 'Cumulative impacts and Interactions' is almost derisory – four pages in total, one table, one page of contents, one blank page and about one hundred words.

The general approach of Chapter 13 'Impact on Human Beings' shows a failure to grasp the issues likely to affect this particular community from the operation of this particular facility in this particular location – which surely should be the core of an impact assessment.

The other chapters discussed above make even less contribution to the assessment of impacts. The baseline health survey, which I carried out, shows clearly that the community immediately around the proposed site is potentially very vulnerable to any adverse effects of plant operation and construction, a fact which is nowhere acknowledged in the EIS.

A final issue is the scientific evidence for health effects on populations adjacent to municipal incinerators. Prof. Schrenk, who is a most distinguished toxicologist, has produced a review of the literature which concludes that :-

> *'With respect to health effects a number of studies suggest a causal relationship between old Municipal Waste Incinerators and certain adverse health conditions/diseases such as cancer, respiratory diseases, congenital malformations and hormonal changes. Most of theses studies were hampered by the lack of adequate measurements on internal or external exposure and by the likelihood of strong confounders. Such confounders are mainly urbanisation, socio-economic deprivation and related factors.*
>
> *...*
>
> *In fact, there is not a single peer-reviewed study showing that modern Municipal Waste Incinerators release hazardous substances at a level causing any harm to the people in the vicinity. Monitoring studies have shown that emissions from modern facilities which are operating within the strict EU limit, have a negligible contribution to background levels. No study has shown any adverse health effects in the vicinity of a modern Municipal Waste Incinerator clearly related to the plant.*
>
> *In summary modern Municipal Waste Incinerators can be regarded as safe facilities which have an imperceptible impact on the environmental and health situation in their neighbourhood.'*

This review contains some questionable interpretations of the existing literature, and shows a very common misunderstanding of the principles and limitations of epidemiology. All epidemiological studies are limited by the presence of confounding. The science of epidemiology lies in carrying out studies and interpreting them in a way which makes sense of confounding. It is important to emphasise that many of the errors to which epidemiological studies are prone tend to reduce the estimated effect of environmental exposures, and the reported risks are often in reality, lower estimates of the real risk.

I can appreciate epidemiology can be rather confusing, and I agree that the interpretation of the existing literature is difficult, but I do not agree with Professor Schrenk's conclusions.

Capacity

In our HRB funded report we noted that Ireland was poorly equipped to assess, monitor, and enforce human health protection :-

> *"(a) Risk assessment*
>
> *Ireland presently has insufficient resources to carry out adequate risk assessments for proposed waste management facilities. Although the necessary skills are available, neither the personnel nor the dedicated resources have been made available. In addition, there are serious data gaps (addressed under point (c) below). These problems should be rectified urgently.*
>
> *(b) Detection and monitoring of human health impacts*
>
> *Irish health information systems cannot support routine monitoring of the health of people living near waste sites. There is an urgent need to develop the skills and resources required to undertake health and environmental risk assessments in Ireland. This should be considered as an important development to build capacity in Ireland to protect public health in relation to potential environmental hazards. The recommendations in the Proposal for a National Environmental Health Action Plan (Government of Ireland 1999) could form a basis for this.*
>
> *(c) Detection and monitoring of environmental impacts*
>
> *The capacity (in terms of facilities, financial and human resources, data banks, etc.) must be developed for measuring environmental damage, and changes over time in the condition of the environment around proposed waste sites and elsewhere. There is a serious deficiency of baseline environmental information in Ireland, a situation that should be remedied. The lack of baseline data makes it very hard to interpret the results of local studies, for example around a waste management site.*

Existing research results should be collated and interpreted as a step toward building a baseline data bank. A strategically designed monitoring programme needs to be initiated that can correct deficiencies in current ambient environmental monitoring. In addition, capacity needs to be built in environmental analysis. In particular, Irish facilities for measuring dioxins are required, and should be developed as a priority. However, the high public profile of dioxins should not distract attention from the need for improved monitoring of other potential pollutants.

(d) Risk communication and perception

Qualitative studies about waste management perceptions revealed a diversity of opinion about waste management issues generally, and about the links between waste management and both human health and environmental quality. To facilitate public debate on the issues of waste management policy and effects, a systematic programme of risk communication will be necessary. This should concentrate on providing unbiased and trusted information to all participants (or stakeholders) in waste management issues. Public trust, whether it is placed in the regulators, in compliance with the regulations or in the information provided, will be fundamental in achieving even a modicum of consensus for any future developments in waste policy in Ireland." (Crowley, Staines et al. 2002).

This remains true, although some progress has been made, for example dioxin measurement facilities have been established in UCC; the National cancer registry has capacity to monitor cancer incidence in small areas; the registries of congenital anomalies, now part of the Eurocat system, have extended their coverage to more of the country; in the former Eastern Region a great deal of health data is available at small area level.

The current situation is that neither the EPA, nor the local authorities, have the capacity, to adequately monitor and police human health. Notionally this is the role of the Department of Health, however the very limited resources in the Department, are well indicated by Ireland's continuing failure to produce our (EU mandated) National Environmental Health Action Plan. The curious division between the respective roles of the planning authority and the EPA has not helped the development of such capacity in Ireland.

Conclusions

The proposed development, in my professional opinion, requires a proper HIA to ensure reasonable consideration of human health issues in the planning and licensing processes. The material provided in the EIS falls far short of any reasonable estimate of what is required. The people of Dublin and the local community deserve better.

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