



meeting **COUNTY COUNCIL**

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agenda item number

REPORT OF THE CABINET MEMBER FOR ENVIRONMENT

REVIEW OF ENVIRONMENTAL AND HEALTH EFFECTS OF WASTE MANAGEMENT: MUNICIPAL SOLID WASTE AND SIMILAR WASTES

Purpose of Report

1. To inform Council of the main findings of the recent review carried out by Enviros Consulting Ltd and The University of Birmingham on behalf of DEFRA. The report is brought to Council because of its responsibility for preparing and maintaining statutory planning policies for waste management. A similar report has been sent to the Planning Committee & Licensing Committee in view of its involvement with planning applications for waste management facilities. A copy of the DEFRA review is available in the Local Government Library, County Hall.

Background

2. Published research into the environmental and health effects of waste management is limited and often contradictory. The Prime Minister's Strategy Unit, in its report "Waste Not, Want Not" recommended an independent review of existing research on the environmental and health effects of the various options for managing waste. The findings of that review are the subject of this report.

Scope of the Review

3. The review focuses mainly on municipal (household) waste and similar commercial and industrial wastes, including that from shops, offices and restaurants. Other industrial waste, agricultural, mineral and hazardous wastes are excluded from this study but will be the subject of separate research.
4. The review does not present any new information but is intended to draw together existing published research on health and environmental effects, and also information on emissions, drawn from other research, operators, and the Environment Agency. The review looks at the principal waste management technologies of materials recycling, composting, mechanical biological treatment, anaerobic digestion, pyrolysis/gasification, incineration and landfill. The report considers the reliability of the available information and is intended to assist in the waste management decision making process.

The Main Findings

5. The environmental effects of the various waste management technologies are relatively well known. The main issues raised are emissions to air, land and water from waste storage, processing, final disposal and transport. Existing legislation and planning controls act to bring these impacts within acceptable limits and no new environmental concerns have been raised through the current study. Landfill and incineration have the highest potential for emissions but evidence of significant environmental effects from waste management facilities is rare. The introduction of more stringent controls since much of the research was commissioned also means that harmful environmental effects are less likely. For example, reductions in the types of materials allowed to landfill and better site engineering should further reduce the risk of groundwater infiltration.
6. Health effects are less well documented and in some cases the study found that there was no published research available. Studies of workers at recycling and composting facilities identified a possible link with asthma, flu type symptoms and stomach irritations resulting from direct exposure to the waste. There is no evidence of an increased risk to people living close to these types of facility but further research is recommended. The possible effects of bioaerosols (minute airborne particles) are not yet fully understood and the Environment Agency currently advises a precautionary buffer zone of up to 250m at open air composting sites because of this uncertainty. The study does not identify any need to extend this. Enclosed composting sites, mechanical biological treatment and other recycling facilities all have the potential to produce particulate emissions but their containment and air filtration measures are expected to provide suitable mitigation to the outside environment.
7. Incineration is often a major cause of public concern but much of the early research was based on older types of incinerator which no longer operate. Since 1996 all UK incinerators have had to meet stringent emission limits which have seen a 99.8% reduction in dioxin emissions per tonne of waste. The study and comparable Environment Agency data show that emissions from modern incinerators are lower than from most other industrial processes.
8. A study of the effects of landfill on health was carried out in 2001. Although this found statistical evidence of an increased risk for certain illnesses in some of those locations studied, further work was needed to establish the cause. In some cases, the locations studied had higher rates of illness prior to a landfill site opening than once the site was operating. This suggests that other factors, such as traffic fumes or low income linked to poor diet may be the cause of, or contribute to, the health outcomes found in that study. Research on emissions into groundwater from landfill suggests that this is not a significant concern. Leachate collection and monitoring systems mean that even in the event of a leak this could be intercepted before reaching the watercourse.

Waste Management in Context

9. Many common health fears surrounding waste management are based on a general lack of awareness of the processes involved. A key aspect of this DEFRA review is that it attempts to put the existing research into context by comparing the health effects from waste management processes with those from other common industrial and domestic sources. This highlights that waste management contributes only a fraction of the total UK emissions of substances

such as carbon dioxide and dioxins compared to activities such as power generation and road transport. Although methane and cadmium emissions, mainly from landfill, are more significant, these are likely to reduce as tighter restrictions on waste disposal take effect.

10. In terms of the scale of risk, accidents in the workplace, at home or with fireworks, for example, pose much more of a risk than potential health impacts from a waste management facility. The study estimates that the likelihood of additional cancer cases arising due to landfill or incinerator emissions to air, for example, is about one nationally every 700 and 2000 years respectively. Whilst the possibility of health impacts cannot be ruled out, the review demonstrates the importance of keeping these in proportion.

Limitations of Existing Research

11. The review looks at the reliability and coverage of the existing data. Whilst this is generally good for landfill and incineration, more research is needed in relation to recycling and composting. Diversion away from landfill is likely to mean greater reliance on composting, mechanical biological treatment and more advanced forms of thermal treatment including gasification and pyrolysis. These processes will therefore require further study. More work is also needed to evaluate the earlier 2001 findings in relation to landfill and birth effects.

Conclusions

12. In the foreword to this review, the Government's Chief Scientific advisor stresses that not collecting or managing waste is not an option. We have to manage the 106 million tonnes of waste produced in the UK each year (7 million tonnes in Nottinghamshire). Whilst it is not possible to rule out completely the possibility of environmental and health effects, these are likely to be small, particularly in comparison with other commercial and industrial activities. On the evidence available, the study concludes that emissions from municipal solid waste management do not pose a significant risk to health and are addressed by existing planning and environmental controls. Further research is needed in some areas, but this review provides a useful basis on which to assess the environmental and health effects of waste management.
13. In the meantime, decisions on proposals for various types of waste management facility will rely on advice from relevant expert authorities, such as the Environment Agency. Similarly, expert advice will be sought in preparing the Council's Waste Development Document to replace the existing Waste Local Plan.

RECOMMENDATION

13. It is RECOMMENDED that the contents of this report be noted.

COUNCILLOR TERRY BUTLER
Cabinet Member for Environment

Director of Resources' Financial Comments

The contents of the report are noted. [DJK 23.9.04]

Legal Services' Comments

Planning Committee has power to decide the Recommendation. [SHB 17.09.04]

Background Papers Available for Inspection

None.

Electoral Division(s) Affected

All.

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14 September 2004