

## Perceptions, attitudes and communication: their role in delivering effective environmental regulation for municipal waste incineration

Science Summary SC030184

The project, undertaken by the Department of Health for the Environment Agency, looks at how the public perceives health risk using municipal waste incineration as a case study. The report makes recommendations on ways in which the Environment Agency and other organisations involved in regulation could help allay public concerns about health risk.

The project report is the result of two meetings at which experts were invited to discuss public perception of the scientific issues behind the incineration of municipal waste. The task was approached by reviewing the processes involved in permitting municipal waste incinerators in England and Wales and the environmental and health impact assessments that form an important input to these processes. Members then turned to an analysis of those factors that tended to concern the public, especially those living close to a proposed incinerator. The role of pressure groups, the importance of the increasing availability of scientific evidence (often via the internet) and the role of non-mainstream scientific thinking were then considered.

Three major problems were identified as being significant factors for public discontent with the processes used in determining planning applications and operating permits. Recommendations for dealing with these issues were suggested.

Firstly, local people may feel that they are not sufficiently involved in the process. It is critically important to involve local people at an early stage in the discussion leading to a decision. The responsibility for this lies with the applicant, the local authority and the Environment Agency.

Secondly, local people may express distrust for expert opinion. This may be due to an intuitive feeling that the experts are wrong or a perception that there is more than one expert opinion on the point in question, that the experts are biased, or that not all the relevant evidence has been presented or considered.

Again, involving local people in understanding and discussing the evidence presented in support of the application is essential. This recommendation places a responsibility on the Environment Agency and other consultees in the process, who should be seen as guardians of public welfare and should inform the public of their concerns. Meetings with the public may be needed and officials from the Environment Agency should regard these as more than opportunities to register local concerns. Accepting that contrary opinions may be expressed is very necessary.

Thirdly, linked to doubts about expert opinion are concerns about uncertainty. Expert opinion often includes a discussion of uncertainty, which may be expressed in a variety of ways but which is usually well understood among scientists. However, local people may view uncertainty in a very different way. Explaining that many scientific conclusions based on experimental or observational evidence are subject to uncertainty is difficult and cuts across the perception that science should provide sure answers. Again, engaging with local people is essential. It is important that local knowledge and information has a real and important part to play in the deliberative process. An adversarial approach should be avoided as far as possible.

A final recommendation is that the Environment Agency should learn from examples of decisions that have 'gone well' – in the sense that participants have been satisfied by the process – and from those that have 'gone badly'.

Three recommendations for specific areas of scientific research that will help the Environment Agency tackle problems of public distrust and concern were also made:

1. Work is needed to explore why people have a distrust of conventional science when it is applied to decision-making processes, something that applies much more widely than just with the question of incineration. This might be approached by means of focus groups.

2. Problems are sometimes encountered where applications include much complex science, particularly in the field of modelling dispersion of pollutants and predicting their effects on health. Ways of simplifying such presentations so that they can be more widely understood are needed.

3. Further work on how local people acquire and understand scientific evidence is needed. Again, work with focus groups may be a useful way forward.

This report should provide useful background information for Environment Agency staff involved in any aspect of regulatory processes about which the public may have health concerns, as well as staff in other organisations involved in such work.

**This summary relates to information from Science Project SC030184, reported in detail in the following output:**

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