The Air Quality Strategy

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Introduction

The Air Quality Strategy (the Strategy) was published by the United Kingdom Department of the Environment, Transport and the Regions in January 2000. The purpose of the Strategy was to set out the aims of the Government and the devolved administrations for improving air quality in the United Kingdom over the following five to ten years. The Strategy includes two main components: air quality standards and air quality objectives. The air quality standards are statements of what the Government considers to be safe levels of the pollutants concerned and are deliberately set without regard to the cost or practicality of achieving these levels of pollution. The objectives, however, are the concentrations of these pollutants that the Government aims to achieve by particular dates, having taken into account all relevant factors, such as the practicality and cost of achieving these concentrations. In most cases the long term air quality objectives are the same as the air quality standards.

The 2000 Strategy covers eight pollutants, and because it is centred on achieving specific outcomes for each pollutant, it covers a variety of different policies in different sectors of the economy. In the transport sector, for example, it covers European Union vehicle emission and fuel standards, as well as local authority traffic management measures and local transport plans. For industry, relevant policy instruments include the Integrated Pollution Control regulations and the adoption of technological improvements and environmental management standards.

What questions did we ask?

In 2001 we undertook an audit of the 2000 Air Quality Strategy. This was an unusual audit for us in that it centred on the design phase of policy making, rather than on implementation.

Specifically, we examined how, in developing the Strategy, the Department had:

- marshalled the evidence on the effect of poor air quality on health;
- assessed the options for setting and delivering air quality objectives;
- planned the implementation of the Strategy.

Hence the focus of our examination was on the Department's internal processes.

What did we do?

Our first step was to establish a set of criteria for good practice in environmental policy making, drawing on: cabinet office guidance; guidelines issued by the Government's Chief Scientific Advisor; and the findings of the official inquiry into BSE (mad cow disease). The BSE inquiry was particularly helpful because an important factor that led to the mishandling of BSE in the UK was that the scientific advice received by the Ministry of Agriculture was poorly used and in some respects incorrect. The inquiry report therefore gave valuable pointers towards the best way to obtain and use expert scientific evidence.

Having established our sources of good practice, our next step was a detailed scrutiny of what the Department had done. This scrutiny took three main forms:

1) A comparison of what the Department had done against the main principles arising from our study of good practice. For example, were scientific advisors appointed from a wide

enough range of candidates? Was their advice open to peer review by other experts in the field?

2) Consideration of the internal logic of what the Department had done. Did they follow the process they planned to follow at the outset? Were the conclusions they drew actually supported by the evidence they had found?

3) Examination of the Department's own internal processes of scrutiny. How did the Department verify the evidence from experts, and how did it trial and test possible solutions?

The final step in our methodology was to consult with key players outside the Department, and to carry out a postal survey of all the main bodies involved.

Key Findings

The first key finding was that the Department had based the Strategy on the best evidence available at the time on the effect of air quality on health. However, this evidence was limited in some areas, and often inconclusive.

The second key finding was that the Department's work on the costs and benefits of the Strategy was underdeveloped and as such only informed the air quality objectives to a limited extent. Following the 1997 Strategy, the Department had set up an Interdepartmental Group on Costs and Benefits to undertake cost benefit analysis. Although the Group concluded that significant health and non-health benefits would result from improved air quality, it was unable to put a monetary value on these benefits or estimate all of the costs of achieving them.

Finally, we concluded that uncertainty needed to be recognised and better managed. Uncertainty in policy making arises from many factors. Scientific uncertainty is one significant cause, but factors such as the state of the economy also have an effect. Environmental policy makers need to reduce uncertainty where they can but they will often be unable to eliminate it. So they need to consider carefully how uncertainty can affect the likelihood of them achieving their objectives and to draw up contingency plans for the unexpected. They also need to plan for implementation and for the future review of policy.

Recommendations

On the basis of these findings, we made some specific recommendations. The first concerned the use of experts. Much of the scientific evidence used to underpin the air quality standards was carried out in the early to mid 1990s. This is a fast moving area of science and we concluded that the Department needed to plan to review and update this evidence with the passage of time. The Department was also likely to need to consider carefully how to integrate this work with that carried out in the European Union, since increasingly limit values for pollutants are being set at the level of the European Union, rather than by member governments. We also recommended, however, that it should not only be experts who contributed to the process of setting air quality standards, and that the Department should widen the membership of the Expert Panel on Air Quality Standards to include lay members.

The health evidence in particular, was an area where there were important gaps that needed to be filled, for instance regarding the chronic health effects of pollutants such as nitrogen dioxide. While these gaps remained it would be impossible to predict the precise effect of improving air quality on improving health.

Similarly many uncertainties remained about both the costs and benefits of improving air quality. One particularly important issue was that it is easier to put a value on the costs of improving air quality than it is to put a value on the benefits. This creates a serious risk that

the costs and benefits are not compared on equal terms, and that costs, being more certain, are given undue prominence over benefits.

Indeed, as our findings indicated, this audit highlighted the over-riding importance of managing uncertainty in environmental policy making, and the need for public bodies to recognise that uncertainty is inescapable and needs to be planned for.

Finally, this audit also highlighted the important role of local authorities in implementing this strategy. Given that achieving the air quality objectives was likely to be challenging for some authorities, we recommended that the Department monitor local implementation of air quality action plans and review local authorities' achievements in improving air quality.

Impact

The headline indicator for pollution levels in the UK remains fairly volatile, though for urban areas at least there is a long-term downward trend, and much of the short-term variation is caused by weather conditions. At the level of policy process, however, there have been considerable improvements, some of which arose as a direct response to our recommendations.

For example, the membership of the Expert Panel on Air Quality Standards has been widened to include a lay member. The Department has undertaken a variety of new research projects to improve the evidence base for the Strategy including research on: the health effects of air pollutants; valuing the health benefits of air quality; improving its methodology for valuing the health benefits of air quality and incorporating non-monetary factors in setting air quality objectives.

In 2003 the Department updated the strategy and included tougher targets for three pollutants and a new target for the pollutant polycyclic aromatic hydrocarbon.

And in 2004, the Department funded a major evaluation of the different policy instruments it had implemented to achieve air quality improvements. The evaluation focussed on policies in the two most important sectors – the electricity sector and the transport sector - from 1990 on. The report was positive in its evaluation of the strategy, and concluded that: policies in both sectors have led to major emissions reductions; these policies have generated large benefits in reducing the health and environmental impacts; and these policies have been cost-effective in achieving the desired emissions reductions.

This evaluation also concluded that for the transport sector at least, the potential for progress at a national level had been all but exhausted, and that it would be more cost-effective for the Department to turn its attention to local delivery.

Finally, we have certainly benefited ourselves from the audit. We now have an established methodology for evaluating the design phase of a policy. We have key findings that are relevant to other study areas. And we have the option of returning to the Air Quality Strategy for a follow-up piece of work.