

SURFACE MINERAL WORKINGS AND DUST – ANALYSIS OF RESPONSES TO CONSULTATION

INTRODUCTION

On 7 July 2000 the Scottish Executive issued a consultation paper on surface mineral workings and dust. The paper sought views on the Executive's proposed response to recommendations made in the Government commissioned research *Do particulates from opencast coal mining impair children's respiratory health?* The research was carried out by the Department of Epidemiology and Public Health at the University of Newcastle upon Tyne and was published in December 1999.

The consultation, covering a nine week period, closed on 8 September (although several responses received after this date have been included). Around 1200 copies of the paper were distributed to all local authorities in Scotland, a wide range of public bodies and Non Government Organisations (including all Health Boards), industry, business and professional interests, plus a number of other groups and individuals. Further copies were distributed on request and the document was also made available on the Executive's Internet website.

This report presents the findings of the consultation exercise, the major issues raised and the Executive's conclusions. A list of respondents is provided at Annex A and a detailed summary of responses can be found on the Executive's website at www.scotland.gov.uk/planning/

OVERVIEW

We received 81 responses to the consultation paper, 66 written contributions and 15 by e-mail (some e-mail contributions were also submitted in writing – these are not included in the written total), all of which have been analysed by the Executive. Responses were submitted by a wide range of interested parties and can be broken down into the following categories:

Category	Number of Responses
Local Authorities, Planning	17
Minerals Operators/Organisations	12
Individuals	7
Professional Organisations	7
Public Bodies	7
Community Groups	6
Non Government Organisations	5
Health Boards	4
Legal Practitioners	3
Other Business	3
Consultants	2
Local Authorities, Environmental Health	2
Local Enterprise Companies	2
Educational Institutions	1
Total	78

Three respondents asked for their contributions to remain confidential. Copies of all other responses are available for public inspection at the Scottish Executive Library, Saughton House, Broomhouse Drive, Edinburgh EH11 3XD (an appointment can be made by contacting Alan Gold on 0131 244 4552).

MAIN THEMES

The Executive's proposals generated a broad spectrum of views, unsurprising given the diversity of the respondents. Of those respondents that offered comments (62 responses), 28 (45%) explicitly welcomed the proposals and 34 (55%) highlighted various points of concern or made other observations.

Community groups, individuals and environmental interests were almost universally supportive of the proposals, although a small but significant minority felt they did not go far enough and could be more robust. Minerals operators and other business interests generally had reservations, in particular expressing doubt as to whether monitoring technology, data collection methods and existing data are sufficiently developed to support the assessment framework. The consensus was that the opencast industry is already subject to robust and demanding regulations which ensure a high standard of operation, and best practice is still the most appropriate way to control dust. Planning authorities were more mixed in their views, ranging from the belief that the proposals would provide better guidance for authorities and applicants, helping dust to be looked at more systematically, to the suggestion that the paper does not give particularly clear guidance and is ambiguous. Overall however, planning authorities appear to accept the essence of the proposals, albeit with reservations over the resource implications and the monitoring difficulties highlighted above. There were also some calls for the Executive to offer more detailed guidance and for further discussions to take place before any final decisions are made.

The key issues highlighted were:

- aspects of the Newcastle research;
- Air Quality Standards;
- the proposal to extend the research recommendations to all mineral types;
- monitoring and data availability;
- definition of 'community' and 'sensitive premises/users';
- wording of addenda;
- the assessment framework;
- the 1km cut-off distance for assessment;
- effects of particle size;
- resource implications; and
- further research requirements

These are discussed in more detail below.

KEY ISSUES

The Newcastle research

A significant number of respondents (14), mainly individuals and community groups, identified concerns about the Newcastle research, in some instances using these as a basis to

question the validity of the Executive's proposals. In one case the study was said to be insufficiently robust to be used as a basis for planning decisions. Nonetheless, respondents appear generally to have accepted the key findings of the research and COMEAP's endorsement of these.

The most frequently raised point was that sites used in the Newcastle study were much smaller than many Scottish ones and the results could not necessarily be directly extrapolated, there being an association between scale of operation and dust generation. As a result the implications for Scotland may be underestimated. Some respondents thought the study too narrow by focusing on one age group and too short, plus there were reservations about the omission of site and climatic variables and other dust sources. On the health side it was noted that the study only examined acute and not chronic effects, and no objective assessment of respiratory function was made. One respondent was of the opinion that epidemiological studies are 'coarse and inaccurate tools' and that laboratory studies may be more revealing.

Air Quality Standards

The proposal to relate dust assessment and control to National Air Quality Standards (AQS) generated few comments. One respondent suggested that it may be beneficial to include reference to Pollutant Specific Guidance LAQM.TG4 (00) May 2000, used by local authorities when assessing likely AQS exceedences. It was also noted that the proposed assessment framework appears to follow steps laid down in the first stage of this guidance. In one case concern was voiced about the use of AQS because of variability in local conditions, but no other respondents mentioned this point. There was a suggestion that site operations should be suspended on days when AQS are exceeded and also that published air quality data should be given priority over site/community monitored data.

Three respondents commented on the proposal to add $2 \mu\text{g}/\text{m}^3$ PM_{10} to AQS as attributable to opencast sites. One felt there should be clearer guidance for local authorities when interpreting the significance of this figure. Another thought that Scotland would not appear to have any sites that would be compromised by this additional load and therefore the implementation of the assessment framework may be premature, whereas the third felt that a standard figure would inadequately reflect site variability.

The proposal to extend the research recommendations to all mineral types

The rationale behind this proposal was the confirmation by the Committee on the Medical Effects of Air Pollution (COMEAP) that the small increase in PM_{10} concentrations close to opencast sites identified in the Newcastle research was not due to the release of coal particles but more likely to dust associated with earth moving and excavation. Opinion was divided amongst those who expressed a view. 13 respondents agreed with the proposal, mainly community groups and individuals. 11 objected for a variety of reasons, including the absence of any supporting evidence in the Newcastle research.

One respondent suggested the assumption that PM_{10} is attributable to excavation could be open to question, given that the research did not consider particle dispersion or alternative sources. Other reasons given included the fact that opencast is very different from most other quarrying activities, with different geology and operating conditions, besides involving larger volumes of material typically consisting of finer grained particles. It was thought that other mineral types should be demonstrated to have the same dust generating characteristics as

opencast, otherwise it would be difficult to justify applying the framework. One respondent cited research from England concluding that dust is not a problem in quarries and others pointed out that road transport is the largest single source of PM₁₀, with opencast and agriculture accounting for a large proportion of the remainder. The view was expressed that the minerals industry should be considered equally with other potential sources.

Monitoring and data availability

This aspect of the proposals prompted most comment amongst respondents, with views expressed from nearly all categories. Concern was centred on:

- scarcity of good quality background data;
- costs associated with collecting new data, in terms of both time and resources;
- lack of expertise in local authorities for assessing data, judging their significance and making decisions;
- unreliability of monitoring equipment, with variable results often obtained from different apparatus;
- insufficiently developed methodologies;
- difficulties in detecting specific dust episodes, plus unpredictability of dust sources;
- lack of suitable monitoring sites; and
- problems associated with climatic and environmental variability.

Respondents thought that these difficulties would invariably result in inaccurate, unreliable or inconclusive data, leading to potential problems for planning authorities. For instance, challenges by applicants or communities could become commonplace, or situations could develop where work is forced to stop when extraction has already begun. The outcome would be a climate of uncertainty and reduced confidence in the planning system.

Several respondents, predominantly from the minerals industry, questioned the introduction of the monitoring scheme in its proposed format under these circumstances, being of the opinion that best practice is the most appropriate way of controlling dust. One respondent believed that only existing dust sources should be considered, and not those that may develop in the future.

Individuals and community groups who commented on this aspect were keen to see robust monitoring schemes in place, despite the problems outlined above. These respondents were also concerned about how compliance by developers could be properly assessed, and about the failure to include monitoring requirements for diesel or ultrafine particles (although this was outwith the scope of the study). An area not covered by the paper, picked up on by one respondent, was the cumulative effects of dust from several sites close together.

Definition of ‘community’ and ‘sensitive premises/users’

13 respondents commented on these terms, suggesting that they should be more clearly defined and consistently used. The main points noted were that:

- NPPG 16 defines ‘community’ whereas NPPG 4 does not, yet the term will be included in both as part of the proposed assessment framework;
- proximity of sites to both communities and sensitive premises/users is given as the criterion for triggering dust assessment in the paper, although only the former is used in the framework itself;

- some concern was expressed that individual properties are not currently covered by either NPPG 4 or 16, as neither define ‘sensitive premises/users’ – it was pointed out that this could have implications for the assessment framework; and
- the term ‘any residential property’ is used in paragraph 20 but is not defined or included anywhere else in the paper.

Proposed solutions to these discrepancies were to add the NPPG 16 definition of communities to NPPG 4, and to change ‘communities’ in the assessment framework diagram to something more encompassing. Seven respondents suggested the latter approach, and possible terms put forward included ‘community or sensitive premises/user’, ‘residential building’, ‘individual properties’ and ‘dwellings’.

Wording of addenda

The form and wording of the proposed addenda to NPPGs 4 and 16 attracted some varied comments. Of the 18 respondents who expressed views, only one considered the contents acceptable in their current format. Several respondents felt that more detail should be included from the consultation paper, with one going so far as to say that the addenda are unlikely to assist planners, applicants or communities. Another suggestion was to give a clear reference as to where more detailed information could be accessed. Others considered that the wording should be identical in both addenda and that provision should be made for regular updating to take account of new scientific advice. Alternative approaches were also proposed. These included an additional reference in PAN 50, an addendum to PAN 50 with no changes to the NPPGs, issue of a new PAN and full revision of NPPG 4. One respondent felt that the guidance should seek to address the dust effects listed in paragraph 45 of PAN 50.

The assessment framework

There was some support for the proposed assessment framework. Other research was cited which suggests its adoption should provide adequate safeguards and it was recognised as being consistent with the precautionary principle.

However, there were some criticisms. Six respondents thought the framework was unclear as to how planning authorities should judge the significance of impacts, with another pointing out that there is no statutory definition of ‘significant’. The framework was also felt to be too general and ambiguous, and open to misinterpretation, but could be useful if supported by detailed guidance. Another respondent thought that implementation may be premature, given the scarcity of data and insufficiently developed methodology. Dalgleish Associates Ltd., an environmental consultancy, proposed an alternative framework. Finally, there was concern expressed by one respondent that the framework may be used by planning authorities as an overriding reason to refuse permission, without taking other factors into account.

1km cut-off for assessment

The proposed 1km cut-off for undertaking dust assessment was generally welcomed. Of those who responded expressing a view, 12 were in favour and only one objected. Several respondents saw this as an opportunity to call for a revision of the separation distance between properties and mounds/bunds, given that these were shown to be the main source of PM₁₀. 500m (to come into line with the working face separation distance), 1km (for

consistency with dust assessment) and even in one case 5km, were all mentioned as suitable distances.

The question of how a lesser distance could be justified in individual circumstances was also raised. It was suggested that the onus should be on applicants to do this through the EIA or that it should be one of the functions of monitoring. One respondent felt that the 1km should start from the outermost bund or mound and not from excavations.

Effects of particle size

Some respondents noted that there is a relationship between particle size and magnitude of effects. It was pointed out that dust can be a nuisance without being a health threat, and that generally more complaints are received about the former. The relationship between PM₁₀ and nuisance dust was thought to require further investigation. Two respondents cited research demonstrating that very small particles (particularly PM_{2.5} and PM₁) have more effects on health, with PM₁₀ relatively harmless. There is also some uncertainty about sources of airborne particles, with current estimates referring mainly to US data.

Resource implications

19 respondents (including 12 planning authorities) thought that adoption of the assessment framework may have financial and/or staffing resource implications, mainly associated with purchase of monitoring equipment, data collection and interpretation. A number viewed this as a matter of concern or believed that costs could be 'significant'. Three respondents suggested that any additional costs should be borne by applicants (although it was pointed out that this could be difficult for smaller operators) and one felt that the Executive should take responsibility. Only one respondent who expressed a view considered that resource implications would not be an issue, except where new monitoring equipment was needed.

Further research requirements

Some respondents felt that further research is needed on various topics, including dust behaviour, the cause and effect relationship between dust and health, diesel emissions and ecological effects. The scarcity of similar long term studies for comparison and of research under Scottish conditions was also noted.

The Executive's conclusions

The Executive has carefully considered all of the views expressed by respondents to the consultation exercise. Whilst acknowledging the reservations that were expressed about incorporation of the Newcastle research recommendations and assessment framework into planning policy, we believe that they are workable. It should be borne in mind that, for the vast majority of potential and current sites in Scotland, current best practice will be sufficient to ensure that AQS are not exceeded. Thus, operators and planning authorities will not normally have to undertake any monitoring work additional to what is already required of them. The main aim of the framework is to focus attention on this important issue and to provide a clearly defined structure within which to consider proposals. We recognise that there are valid concerns about data availability and monitoring technology, but there is a considerable amount of good quality data already in existence which can be applied. There will be few, if any, instances where either existing data or routine monitoring are unable to

indicate whether AQS are likely to be exceeded. We have, however, amended the new paragraphs as proposed in the consultation paper. This introduces some flexibility to take account of developing good practice, whilst continuing to implement the recommendations made by COMEAP and the researchers.

NPPG 4 (new paragraph 37A)

Government sponsored research, *Do Particulates from Opencast Coal Mining Impair Children's Respiratory Health?*, was published in December 1999. This recommends a framework to guide the assessment of the implications of opencast coal proposals on National Air Quality Standards. The research findings have been endorsed by the Committee on the Medical Effects of Air Pollutants, the panel of independent experts which advises the UK Health Departments on these matters. The research concluded that increases in particle concentrations close to opencast coal sites was not due to the release of coal particles but was more likely caused by earth moving and excavation activities common to all mineral workings. In the circumstances, planning authorities and the industry should, as a minimum, adopt the researchers' assessment framework in drawing up and considering proposals for new surface mineral workings, or extensions or modifications to existing sites. In doing so, use should be made of information collected by local authorities in undertaking their responsibilities for Local Air Quality Management. They should also continue to take account of developing good practice.

NPPG 16 (to replace existing paragraph 31)

Government sponsored research, *Do Particulates from Opencast Coal Mining Impair Children's Respiratory Health?*, was published in December 1999. This recommends a framework to guide the assessment of the implications of opencast coal proposals on National Air Quality Standards. The research findings have been endorsed by the Committee on the Medical Effects of Air Pollutants, the panel of independent experts which advises the UK Health Departments on these matters. As a minimum, planning authorities and the industry should adopt the researchers' assessment framework in drawing up and considering proposals for new sites, or extensions or modifications to existing sites. In doing so, use should be made of information collected by local authorities in undertaking their responsibilities for Local Air Quality Management. They should also continue to take account of developing good practice.

Annex A : List of Respondents

Aberdeenshire Council
Advocates' Library
Aggregate Industries UK Ltd
Angus Council, Environmental and Consumer Protection Department
Angus Council, Planning and Transport Department
Argyll and Bute Council
The Association for the Protection of Rural Scotland
Ayrshire and Arran Health Board
British Airports Authority Scotland
British Aggregates Association
Broadley and Coulson
Chartmount Minerals Ltd
Clackmannanshire Council
The Coal Authority
Coalfield Communities Campaign
Confederation of British Industry
The Confederation of United Kingdom Coal Producers
Cousland Environment Campaign
Crouch Mining Ltd
Dalglish Associates Ltd
Dumfries and Galloway Council
East Ayrshire Council
The Elphinstone Environment Campaign
Falkirk Council
J Fenton and Sons (Contractors) Ltd
Fife Council, Environmental Health Service
Fife Council, Planning Service
Fife Health Board
Forest Enterprise
Friends of the Earth Scotland
Glasgow City Council
Glasgow and the Clyde Valley Joint Structure Plan Committee
Grampian Health Board
Heriot-Watt University/Edinburgh College of Art, School of Planning and Housing
L.A.W. Mining Ltd
Norman Lawrie
Mining and Environment Group Ayrshire
Mr C Moffat
Montagu Evans
Dr John F Munro
National Farmers' Union of Scotland
No Opencast
North Ayrshire Council
North Lanarkshire Council
Orkney Islands Council
Mr J R Paterson
Patrick Gillooly Ltd
Peat Producers Association

Quarry Products Association
Renfrewshire Council
Royal College of Physicians of Edinburgh (two submissions)
The Royal Environmental Health Institute of Scotland
The Royal Incorporation of Architects in Scotland
The Royal Institution of Chartered Surveyors in Scotland
The Royal Town Planning Institute in Scotland
RPS Consultants Ltd
Scottish Aggregates Ltd
Scottish Biodiversity Group
Scottish Centre for Infection and Environmental Health
Scottish Coal
Scottish Enterprise Fife
Scottish Enterprise Tayside
Scottish Environment Protection Agency
Scottish Natural Heritage
Scottish Opencast Action Group
Sibelco Minerals and Chemicals Ltd
South Ayrshire Council
South Lanarkshire Council
sportscotland
Sir Teddy Taylor MP
Tayside Health Board
Valuation Office Agency
Maureen H Ward
Weatherall, Green and Smith
West Lothian Council
West of Scotland Water Authority
A B Wilson