

NSCA

49th ANNUAL CONFERENCE

18 - 21 OCTOBER 1982

PART TWO

Report of Discussions

EDITOR'S NOTE: Reportage of the Proceedings at the Conference has been curtailed by a technician's recording error which made it impossible to transcribe the tapes of Session 2, the second half of Session 3, and a small part at the beginning of Session 4, part 1. What is published as an account of those sessions, therefore, has been derived from written contributions sent in by speakers who had retained notes of their comments, or who could recall the essence of their remarks. The authors kindly responded to this record, although obviously their replies are abbreviated since there was no verbatim transcript to consult.

Contributions from the following speakers are, unfortunately, missing.

SESSION 2

Naomi E.S. McIntosh, Chairman of Session (President of the Society)

Mr. L.V. Penzer (National Coal Board)

Mr. D. Bird (NSCA, Yorkshire & Humberside Division)

Mr. M.J. Gittins (Leeds City Council)

Mr. R.J. Kidd (Newtownabbey Borough Council)

SESSION 3

Mr. F.J. Feeley (Glasgow City Council)

Mr. E.W. Foskett (Manchester City Council)

Mr. J.E. Hall (Peterborough City Council).

SESSION 4, Part I

Mr. J.F. Barraclough (Author) (reply to Mr. D. Clark)

We apologise to our readers, and particularly to the above-named, for the loss of these contributions from the record. We should like to thank all the delegates who sent written versions of their comments. Their efforts, and above all, those of the invited speakers at the affected sessions, are deeply appreciated.

The Canolfan Aberconwy Centre management has expressed sincere regret for the technical mistake made with the recording.

49th Annual Clean Air Conference
Llandudno, 18-21 October 1982
PART 2 - REPORT OF DISCUSSIONS

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KEYNOTE ADDRESS - COAL AND THE ENVIRONMENT
Lord Flowers, FRS

It is a great pleasure for me once again to address the National Society for Clean Air. You have a long history of trying to establish a sensible balance between industrial activity and environmental protection, but in spite of the enormous improvements in air quality which have been achieved in recent decades there remains much for you to do. Your influence is likely to be crucial if, as many expect, there takes place in the next decade a substantial increase in coal burn by urban industry. This is the subject of your first three sessions at this annual conference, and I am grateful for the opportunity to try to start you off.

I shall leave it to others to deal with your particular preoccupations. This evening I want to talk about more general issues facing the coal industry in its relationship with the environment, and in particular some of the major findings of the Report of the Commission on Energy and the Environment. Some of what I have to say may have a hollow ring given the attitudes of the present leadership of the National Union of Mineworkers.

The Commission on Energy and the Environment was appointed by the Government in March 1978 with the very broad terms of reference "To advise on the interaction between energy policy and the environment". Our task as we saw it was to try to establish a consensus about how to formulate energy policies in such a way that they might prove broadly acceptable amongst all the many interests involved. We set our sights at and around the end of the century, but did not forget the present or the past. We believe that the first requirement was to ensure as far as possible that the facts and the relevant arguments were known to all. Our Report is therefore, in part, an educational document - expository, descriptive and explanatory - paying as much attention to energy policy as to environmental implications. That, and the wide range of issues we tackled, account for the length of the Report - and for its cost.

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We chose to study coal for fairly obvious reasons. Over the past 10 years nuclear power has been, and still is being, exhaustively studied in all its aspects. Whatever future one sees for nuclear power, and however optimistic one may be about energy conservation and the introduction of renewable sources, and however long one believes the present oil glut will continue, coal has a lasting place in the British energy scene with an annual consumption between now and the end of the century somewhere in the range 110 to 170 million tons, according to our best estimates, of which we assumed that most could and would be supplied by the National Coal Board, allowing for marginal imports and exports.

We addressed ourselves to those who were dubious about the future of the British coal industry, and not without reason for it could easily price itself out of the market. "The interest of the taxpayer and the energy consumer on the one hand," we said, "and the long-term prospects for employment and real wages in the mining industry on the other, can only be reconciled by investment in industrial modernisation and realistic wage settlements which allow coal costs to retain and increase their competitive edge over other forms of fuel. These two sets of interests," we continued, "cannot be reconciled by policies which lead the NCB to produce the last possible tonne from obsolescent, high-cost capacity - the burden which such a policy would place on the consumer or on the taxpayer could not in practice be endured - and to persist in such a course would certainly mean that investment in modernisation would be the casualty."

We found, broadly speaking, that there was no necessary conflict between these economic considerations and environmental requirements because, as we wrote, "This process of modernisation affords the best prospect of striking an acceptable balance between energy and environmental interests. New low-cost, high

productivity capacity can be designed to high environmental standards. The bringing on-stream of such capacity will facilitate the phasing-out of obsolescent capacity in areas whose decline is associated with the worst environmental legacy of the past."

The legacy of the past gave us cause for great concern, because it is responsible for the image of the coal industry that most people have. A modern, well-planned, sensitively managed colliery need be no more in its environment than any other heavy engineering operation employing a few thousand workers. But it has not always been so, and as long as there remain great tracts of neglected and derelict town and country - in Yorkshire, for instance, and in South Wales - dominated by rusting pithead workings, by the bitter heritage of uncontrolled subsidence and scrofulous spoil heaps, people must be forgiven for believing, incorrectly to be sure, that this is what a flourishing coal industry exists to perpetuate and proliferate. Many of our recommendations were therefore concerned with clearing up the legacy of the past.

We were greatly impressed by what could be achieved nowadays with modern plant, with landscaped spoil tips, and with the rehabilitation of old workings. It encouraged us to believe that the adoption of current best practice throughout the industry, as at Selby for example, combined with the phasing out of obsolete plant, would prove to be environmentally as well as economically acceptable. There were, however, three areas where great care would be necessary - spoil disposal, subsidence and opencast mining.

The volume of spoil to be disposed of is immense. Spoil is produced in the UK at about 50 million tons per annum. At this rate it will require altogether about 5000 hectares of land by the end

of the century in the form of 50 tips of 20 million tons each - an area, in aggregate, roughly equal to that of the town of Middlesbrough. For the time being mining techniques and cost considerations mean that most of this spoil must be tipped locally. This sets a premium on improved tipping and restoration techniques, whereby the growing tips are progressively returned to environmentally acceptable, and if possible, productive form. We made a number of specific recommendations regarding tipping controls and landscape design but our chief concern was that - particularly in highly worked areas like West Yorkshire - there might not be enough suitable sites, and we noted that the problem of spoil disposal suffers from a lack of any coherent national or regional disposal policy.

We also acknowledged that with modern deep mining methods a measure of subsidence cannot be avoided. It can, however, to a much greater extent than was once the case, be predicted and its harmful effects minimized. Mines can be designed to avoid particularly vulnerable areas, and buildings can be designed to be flexible. Nevertheless, some small proportion of premises will continue to be damaged and our chief concern was with the system of compensation for the restitution of damage actually caused. We recommended that there should be improvements in the local operation of the subsidence compensation code, and some additional provision for residual loss in property values in the event of actual subsidence. It is important to recognise the fear that subsidence engenders amongst the affected public. "Although subsidence will be only one of the factors to be considered," we wrote, "it may in extreme cases rule coal mining out of the question or render the land above completely unsuitable for future use."

Local opinion will want to be satisfied that the effects will not be unduly deleterious if coal mining proposals are to gain public acceptance. It is thus in the nation's interest as well as the NCB's own

interest to ensure that preventive and precautionary measures, and compensation, are planned and undertaken as effectively and as flexibly as possible, in order to reduce the stress and inconvenience for those directly concerned."

You will deduce from what I have said that despite detailed criticisms our Report was not at all condemnatory of the coal mining industry. We were impressed by much of what we saw and heard. That is also true of opencast mining, but there we came to rather different conclusions. We live in a densely populated land, one of sensitive landscapes in which opencast mining is peculiarly obtrusive and disturbing to farmlands and nearby homesteads. The difficulty is that the NCB makes up its losses on unprofitable deep mines by its profitable opencast operations. To be specific, in 1980/81 the NCB made a profit of £157 million on 15 million tons of opencast coal and a loss of £135 million on 110 million tons of deep mined coal. We thought that they should no longer seek to disguise this important fact. The losses on deep mined coal arise from unprofitable pits which we recommended should be phased out - as, indeed, they are being. As deep mining thereby becomes more efficient we recommended that the annual volume of opencast coal should be allowed to decline somewhat and should certainly not increase in the meantime. In the case of opencast operations we believed that the pendulum had swung too far against the environment. I emphasize that this was not our conclusion in respect of deep mining where we believed that environmental considerations had been well served in recent years.

Our Report, however, was not merely about coal production; it was also about the use of coal, including conversion to other fuels. We examined the market for coal, paying particular attention to the NCB's hope that there would be massive return from oil to coal in the industrial sector excluding power generation - the subject of your discussions

tomorrow. A quadrupling of industrial burn from the present 10 million tons per annum was being anticipated, and we thought it important to examine this claim because of its obvious environmental, especially urban implications. As we said in our Report: "A recurring theme throughout our study has been the need for mechanisms which would translate the implications of national energy policy at the local and regional level. A striking feature of the evidence submitted to us is the general awareness of local authorities of the possible scale of re-entry of coal into the industrial market."

I am sure that this Conference will increase the general awareness of the problem.

The point is that the oil-coal substitution is not symmetrical. Storage and handling space for coal, once abandoned in favour of oil, is no longer available for a return to coal. Transport requirements are also different, and the boilers which have to be used. Fluidized beds seem particularly suitable for medium-sized industrial applications, but without government encouragement it seems that Britain's initial lead in this field could be eroded. We were satisfied that the required control technologies and powers exist in principle. What is mainly required is proper installation, maintenance and monitoring under supervision by trained staff. I will leave to others the development of this important theme during the Conference.

Of course, the main use of coal, certainly until the end of the century, will be in power stations. In 1980, 78% of the fuel used to generate electricity was coal; allowing for the decreasing use of oil, even if one is optimistic about the growth of nuclear power that proportion is unlikely to fall very much.

We made a number of recommendations regarding the transport, handling and storage of coal. Perhaps the most important was to urge the greater use of railways whenever that is environmentally preferable. In this respect we fully supported the Armitage Committee. Had we known of the difficulties now facing the railways we might have adopted a more desperate tone. As it was, our main concern was that investment in railway track and rolling stock should not become a bottleneck in the development of coal-fuelled power stations and the industrial use of coal.

We considered the conversion of coal to synthetic fuels, both liquid and gaseous. We concluded, at any rate for the UK, that commercial production of liquid fuels from coal was rather far off - well into the next century - and that synthetic natural gas would almost certainly come first - it is in any case likely to involve a simpler process. The existence of a gas network would obviously make its introduction that much easier. We thought it unlikely that SNG plants would introduce environmental problems that could not be tackled straightforwardly. A full-scale plant would be comparable in some ways to a 2000 MW coal-burning power station; in other ways it might resemble a petrochemical plant. In either case pollution can be contained. We did recommend, however, that before a full-scale commercial plant is engaged upon there should be satisfactory operational experience of a demonstration plant.

Much of our evidence and assessments concerned combustion technology and the residues of combustion which are the causes of pollution. In power stations smoke is no longer a problem because electrostatic separators work to an efficiency of 99.5% and the residual particulates are mostly dispersed as if they were a gas. Ash, although produced in great quantities - 2000 tons a day for a 2000 MW station - produces few difficulties except for the availability of nearby disposal sites. If fluidised beds are eventually developed for power station use to increase combustion

efficiency and decrease sulphur emissions this would exacerbate the problems of ash disposal but not to such an extent that suitable sites could not be found.

The two emissions to air about whose effects there is continued uncertainty and concern are carbon dioxide and sulphur dioxide. Carbon dioxide is the inescapable end-product of the burning of fossil fuels. It goes directly into the atmosphere, from which about half is removed through the biocycle and exchange with the oceans. It is believed that the atmospheric concentration over the next 100 years will be double what it was in pre-industrial times, but other reasons for an increase are the massive deforestation that has been taking place in many parts of the world. Clearly it is a global problem to which global solutions will have to be found if and when anything has to be done. The possible effects of a build-up of carbon dioxide have been well publicized - principally a gradual warming of the atmosphere and a slow melting of the ice-caps, which could have long-term consequences for economic, agricultural and human settlement patterns. Not all these effects, be it noted, need be deleterious. Nevertheless, very distinguished and level-headed scientists have warned that "The carbon dioxide problem is one of the most important contemporary environmental problems which threatens the stability of all nations." As a result of these warnings there is now a comprehensive international research programme of measurement and of simulation under the World Meteorological Organisation. So far, however, no deterioration of climate due to carbon dioxide has been detected. The processes involved appear to be so slow that there is no justification for action at this time beyond continuing the research with due vigilance.

Sulphur dioxide is not so much of a health problem as it was once imagined to be, unless it is associated with smoke, and even then it is dangerous mostly to cigarette smokers who, quite literally, have the remedy in their own hands. The mandatory limits for smoke and sulphur dioxide set out in the EEC Air Quality Directive

provide an adequate standard for the protection of human health. That being so, we also considered that they were adequate as regards local crops and vegetation and the protection of materials against corrosion.

There remains the vexed problem of acid rain. Sulphur dioxide, swept high into the atmosphere and carried across the North Sea, falls as acidified rain on to land which in certain parts of Scandinavia is already acid in character. There are signs of the same phenomenon in Western Scotland. Some of it also reaches the ground by dry deposition, but I will not go into that. The results are harmful to fish and to crops. How much of the damage results from acid rain and how much from the acidity already present is still hotly contested. It may be that adding lime to the appropriate watersheds would be a sufficient solution, although this too may have its side effects. The matter is being intensively researched under a convention of the Economic Commission for Europe. If acid rain should turn out to be the major culprit - originating in parts of the Continent, such as the Ruhr, as well as in the United Kingdom - and if it has to be arrested at source, the solution is likely to be very expensive adding perhaps 10% to 20% to the cost of a unit of electricity. Someone has said that flue gas desulphurisation is the billion dollar solution to a million dollar problem. We did not think that enough was yet known to justify such expenditure at present, although we hedged our bets by saying that desulphurisation research should certainly continue.

Finally, we devoted a chapter to the planning process whereby, under the Town and Country planning system, one tries to reach an accommodation between the principle interests involved in any major development. The concepts of balance and of the interaction between energy policy and the environment were fundamental to our remit and to the way we approached our task from beginning to end. How that balance is perceived is a matter of opinion - the opinion of ordinary people as well as of experts. Ordinary people are

no longer content that Ministers and their advisers have a monopoly of judgement of the public good. They want to participate in the decision-making process, and the means by which they do so, under the law, is the town and country planning system.

We therefore made a number of proposals for streamlining that system. I will not go into detail; suffice it to say that we assumed the public would have to be better informed of likely developments than they generally are at the present, starting from the top. It is first of all necessary that the Government should itself make clear at regular intervals how it views the energy scene - what are the requirements and how might they be met.

It is, of course, a scene that changes with time: with the state of the economy, with external events, with technological innovations, and so on. This, we believed, could nevertheless be made generally comprehensible and would greatly ease the problems of getting any particular development or project into proper public perspective.

Secondly, we thought it important to have some idea of site availability - whether for a power station, a colliery, a spoil heap, or an SNG plant - well ahead of time, so that there can be an element of choice. It really is not good enough to research only one site and then to claim too late that there is no alternative.

Thirdly, we thought that consultation with local interests should be progressive, beginning early at an exploratory level, becoming gradually more comprehensive as and when the project moves forward. Many of the tensions which are encountered at public local inquiries, often the culmination of the planning process, would be eased by more effective dialogue between the relevant interests during the early preparatory stages of planning. The British town and country planning system is astonishingly versatile

when properly used - hence, incidentally, much of the objection to the formal continental and American processes of environmental impact assessment.

I must bring this recital to an end, conscious that it has been patchy and that many important issues dealt with fully in the Report have gone without mention. (Perhaps more will come out tomorrow.) I must, however, express my grateful thanks to my fellow members of the Commission including your President, Naomi McIntosh. They all worked very hard during the 3 years of the study, doing their own thing very effectively, but coming together as a team whenever we had to reach a conclusion. They were fun to work with, and the spread of expert interest amongst them was such that in many respects we collectively resembled the wider public. We also had a devoted and highly skilled Secretariat. It would be invidious to mention names. Above all I have to thank our witnesses, many of whom took immense trouble with their evidence, both written and oral. It was evident to us from the beginning that we would have to work very closely with the NCB and the CEEB. Their efforts on our behalf - on their own as well, of course - were Herculean. But I want to assure you - and Dr. Gibson will confirm it tomorrow - that we distanced ourselves from them, checked up behind their backs, and reached our conclusions entirely independently.

Otherwise it probably would not have been the case that we made about 70 recommendations, mostly about how we thought they could and should do a better job. Many of those recommendations have already been put into effect; others are being intensively studied by the Boards, by local authorities and by the Government.

Let me end, then, by reading to you what is essentially the final paragraph of our Report which sums it all up as well as I can.

"Challenge and opportunity confronts the industry.

A modernised industry designed to high environmental standards can make an immense contribution to an energy strategy designed to diminish in longer term the dependence of the UK economy on imported oil. The decisive determinant of achieving the required restructuring of the industry will be investment in modernisation. Only by such investment will the industry be able to grasp the opportunities afforded by the evolving energy scene. If the interests of the taxpayer, the energy consumer and the industry's workforce are to be reconciled, an integral part of modernisation must be the phasing out of heavily loss-making obsolescent capacity. This calls not only for help to individuals but for a far greater degree than hitherto of forward regional planning in anticipation of the effects of closures on mining communities. It also requires the full co-operation of both sides of the industry in the operation of its existing machinery, the local authorities, bodies such as the Welsh and Scottish Development Agencies and central Government. Failure to face this challenge would be to tether the UK to the industry's past, to postpone into the next century the clearing up of the legacy of past dereliction, and to deny to the country the immense contribution which a modernised coal industry can make in supplying the country's energy needs without unacceptable environmental costs."

PUBLIC EDUCATION IN NOISE

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Large numbers of people are adversely affected by noise. The Organisation for Economic Cooperation and Development (OECD) estimate that 100 million people (15% of total population) in its 24 member states are exposed to noise levels greater than 65dB(A) L_{eq} . Relationships between noise levels and annoyance suggest that, as a result of these levels, at least 16 million people in the OECD countries will be highly annoyed by the noise climate to which they are exposed. In the UK alone the population exposed to levels greater than 65dB(A) L_{eq} is expected to rise from 11% (approximately 6 million) in 1980 to 17-20% (9-11 million) by 2000. Additionally, noise may be dangerous to health and hearing. Also in the UK some 2.6 million workers in manufacturing industries (excluding mining, construction and agricultural activities) are subject to levels which are likely to lead to disability in hearing for a proportion of that population. These risks are extended into recreational activities such as attendance at discotheques and pop concerts and other high noise level sports such as rifle or pistol shooting. Collectively these effects cover the whole range of noise levels experienced by the population. Fig 1 shows the range of effects against the noise level.

There is a tendency to believe that only high noise levels cause problems whereas, can be seen from Fig 1, people are affected by noise over the whole range. Even at the very lowest levels many Environmental Health Officers (EHOs) will be aware that complaints are received e.g. about noise levels in the 20-30dB(A) range, particularly in rural areas or even in some urban areas at night time. At the upper end of the scale there is an increasing possibility of death, since like any other form of energy, noise is capable of causing serious and irreparable damage to human tissue. Fortunately, as the diagram shows, normal sound levels

are well below this but between extremes a wide range of effects may be experienced.

These effects can be categorised into 3 areas:

<u>Category</u>	<u>effect</u>
Nuisance	annoyance disturbance interference complaints
Intermediate	performance efficiency
Biological	Hearing loss - temporary - permanent skin and endocrine system changes respiratory effects organ resonance death

For the present purpose we might divide effects in two: nuisance, and health effects.

NUISANCE

What is clear over the past twenty years is that there has been a growing awareness of noise as a pollutant as measured by community reaction. Complaints, as a measure of community reaction, have continued to increase over the past decade against all sources of noise. The Institution of Environmental Health Officers (IEHO) reports complaints received by local authority Environmental Health Departments. These figures, which are shown in Fig 2, only cover actionable sources under the Control of Pollution Act 1974 and exclude complaints against street chimes, traffic and aircraft but demonstrate convincingly the level of public concern. Moreover, complaints only relate to the 'tip of the iceberg' as one has, it can be assumed, to be highly motivated to complain. A particular feature of the trend in complaints has been a significant increase in complaints against domestic sources, of which Hi-Fi,