

FUEL AND POWER IN BRITAIN

A DEBATE in the House of Lords on January 21 on fuel and power policy in Britain was opened by Viscount Hall, who questioned the policy of replacing the use of coal by oil, particularly at four of the new nuclear power stations, and also suggested that the nuclear power policy might need revision in view of the rate of development and the possibility of building stations that would rapidly be outdated. Replying for the Government, the Minister of Power, Lord Mills, said that current government policy is following the general lines endorsed by the Ridley Committee. He stressed the importance of the Scottish Gas Board's decision to construct a Lurgi plant in Fife for the total gasification of poor-quality coal; this has arisen from close co-operation between the National Coal Board and the gas industry. A similar plant is to be constructed by the West Midlands Gas Board to use deep-mined coal of poor quality, and as an outcome of co-operation between the refineries and the gas industry, surplus products from refineries are to be delivered to gas works and processed into town's gas. Coal still provides the bulk of the fuel requirements of Britain—more than 200 million tons a year—and he hoped that research and development will in due course create new demands for our indigenous coal resources. The Scientific Advisory Council of the Ministry, under the leadership of Sir Alexander Fleck, has been asked to study these possibilities.

In view of the present excess of supply over demand for coal in Britain, the Government has been strongly urged to reduce further the production of opencast coal, to restrict the increasing use of oil fuel and to scale down the nuclear energy programme. Lord Mills stressed the temporary character of the present shortage. As regards opencast coal production, the output is to be reduced by 3 million tons this year; further reduction would involve breaking contracts with an industry in which £27 million has been invested in plant for this purpose. The Government, however, does not agree that the use of oil, which now represents 15 per cent of the fuel consumption of Britain compared with 7 per cent before the War, should be restricted. This would be inconsistent both with the fuel policy of the country and with the Government's general policy of removing restrictions on international trade. The liquid methane imports mentioned by Lord Hall represent, he said, an experimental trial of the technical and economic possibilities. As regards nuclear power, Lord Mills regretted the suggestion for

curtailing the programme to increase the market for small coal. Cheap and abundant power is the basis of a thriving and progressive economy. Thanks to the work of scientists and engineers, Britain leads the world in the use of nuclear energy for the generation of electricity, but we could only utilize that lead by developing an industry continuously advancing the applications of nuclear energy by designing and applying reactors and associated engineering works. This would lower capital and operating costs, to the ultimate benefit of users of electricity and, although great improvements had been made in power stations operated by coal, we should reach a stage when the cost of nuclear power would justify our programme. Any practical results from the fast breeder reactor, of the type being constructed at Dounreay, were probably 10–15 years away, and from *Zeta* still further, but they are all promising developments.

Production of phurnacite has increased to 600,000 tons a year, but there have been setbacks in the development of full-scale manufacture of the process for binding anthracite known as shape. The Coal Board is now completing a pilot installation for the underground gasification of coal at Newman Spinney, near Chesterfield, and it was hoped that gas from this installation would shortly be generating electricity in a small temporary power station erected there by the Central Electricity Board. The programme of the Board for 1958–63 would provide new installed capacity of 12,800 megawatts, of which 10,730 megawatts will be steam driven, including seventeen new stations and three extensions to consume 25–30 million tons of coal a year when in operation.

On the matter of costs the Paymaster-General, Mr. R. Maudling, said in the House of Commons, on the second reading of the Electricity (Borrowing Powers) Bill on January 20, that while the capital cost of nuclear power stations at Bradwell and Berkeley will be about three times that of a coal-fired station, that of Hinkley Point will be down to 2.5 times. The present calculation is that the Hinkley Point station, of which the capital cost will be £120 a kilowatt, as against £145 for the earlier stations, will be marginally slightly more economic than a coal-fired station operating in the same area. Assuming 5 per cent interest-rate, 20 years life for the plant and a 75 per cent load factor, he believes that by the earlier 'sixties the nuclear plant will be marginally more economical than conventional plant.

SECONDARY EDUCATION IN BRITAIN

THE Government White Paper, "Secondary Education for All: a New Drive"* marks no real change of policy but gives some welcome assurance of continuity. The imminent but temporary decline in the school population is to be utilized to improve the quality of education, and the bulk of the new expenditure is to be concentrated on the

secondary schools. By the mid-1960's the worst inadequacies of the schools will have been remedied. There will be more and better school buildings; more and better trained teachers; and smaller classes. The Government, however, considers it would be wrong to dissipate the improvement in educational standards to be secured under this immediate five-year programme by attempting too much too soon. The main objective is to encourage

* Secondary Education for All: a New Drive. Pp. 10. (Cmd. 604.) (London: H.M. Stationery Office, 1958.) 9d. net.

those young people who wish to stay on voluntarily at school beyond the minimum school-leaving age and there is nothing in the White Paper about fixing dates for measures to extend the compulsory period of education. The programme is part of a concerted drive to create an educational system adequate to meet both national and individual needs in the modern world. The keynote is opportunity for the individual boy or girl to go as far as his or her keenness or ability will allow, and the nation must grasp the opportunity to develop the educational system so that it can better fulfil its task of producing citizens who are fitted by character, knowledge and skill to play their full part in an increasingly educated and responsible democratic society.

Before outlining the specific programme, the White Paper points out that the Government does not wish to rule out experiments with comprehensive or similar schools proposed on genuine educational grounds, but is convinced that it would be wrong to abandon the grammar schools, though they alone cannot provide sufficient numbers of highly trained citizens. There is still plenty of room for experiment in the precise pattern of organization to be adopted. The widest possible range of opportunities should be provided for boys and girls of different capacities and fitness, but it is wrong to think that each school can do everything or that each type of school must have a fixed and self-contained exclusive territory.

As a first step the Government proposes to launch and carry through a continuous building programme

for primary and secondary schools, rising from £55 million in 1960-61 to about £60 million in 1961-62 and costing £300 million in the five years to 1964-65. An immediate increase is being made in the volume of minor works which local education authorities and school governors can undertake, and the limit of cost is being raised from £10,000 to £20,000. The re-organization of the remaining 'all-age schools' in which are more than 150,000 pupils of eleven or more is to be completed, and resources will also be found for improving conditions in existing secondary schools. Reference is made to the improvement of science facilities, and although it is not expected to bring all secondary school buildings up to modern standards, by concentrating first on the tasks that will most quickly yield improvements it is hoped to make a big advance towards secondary education for all within the five-year programme. As regards the reduction in the size of classes, the Government's policy is first to increase the supply of teachers, and apart from the expansion of teacher training colleges already announced the Government's policy is to increase recruitment from universities also as far as is consistent with the maintenance and improvement of quality. It is determined that the size of primary classes should continue to be reduced as quickly as possible so that classes of more than forty children are virtually eliminated by the middle-1960's. A decisive general improvement in secondary school classes is also expected within the next five years. The White Paper includes a useful summary of progress under the Education Act of 1944.

THE COUNCIL FOR SCIENCE AND TECHNOLOGY OF WESTERN GERMANY

AN important event during the past year was the foundation of the *Wissenschaftsrat* (Council for Science and Technology) in Western Germany. It was constituted on February 8 with the Federal President himself taking the chair, following a proposal by the president of the German Research Association (*D.F.G.*), Prof. Hess. Previously, at its annual general meeting, the Industrial Donors' Association had already welcomed the idea and stood squarely behind it from the outset. The tasks of this new body are as interesting from a purely practical as they are from an idealistic point of view. Just as interesting is its composition, reflecting all sections of academic, public and industrial life, with members who may be expected to take a large and important share in research, university teaching and training, and the application of pure and applied research in industry and commerce. The academic element, as is traditional in Germany in such matters, is in the majority—sixteen professors, all prominent nominees of the German Research Association, the Max Planck Society and the Committee of German Vice-Chancellors (*Rektorenkonferenz*). In addition to this academic core, the Federal and Land Governments delegate jointly six members, and the Federal Government alone six further leading Civil servants. The latter represent the Ministries of the Interior, Finance, Economics, Food, Transport and include a Secretary of State from the Ministry for Atomic Energy and Waterpower. Also the *Länder*, the highest education authorities, including universities, are themselves represented at ministerial level, by

one delegate each, including Berlin, thus adding nine members. This adds up to thirty-seven, to which the industrialists as sponsors and donors (*Stifterverband für die deutsche Wissenschaft*) also send their honorary president and curator and six further members.

These forty-five men forming the new Council are thus a significant mixture of prominent personalities and well qualified, it would seem, to deal with their brief. This was summarized in the *Bulletin Wirtschaft und Wissenschaft*, published in the spring of 1958:

(1) The reflexion to the outside world of the unity and equality of all science, that is, of the equal importance of research, teaching and training in Germany. This Council could be described as the 'scientific conscience of the nation'.

(2) The Council will have to assess and determine the total requirements of the three tasks, research, teaching, and training, covering the whole federal area.

(3) The Council has to hold a watching brief over a proper flow of young men of promise from university institutions, industry, public life, into positions of responsibility and leadership.

(4) Reforms and developments have to be taken care of, with regard to all three aspects mentioned above, and the financial implications to be worked out in collaboration with the Ministry of Finance.

(5) A key to apportioning financial liabilities among Federal and Land governments has to be found, possibly on a quinquennial basis. (The latter point recalls the five-year period in the fiscal commitments