Science in Europe/Benn and British Rethink Energy Policy

Tony Benn, the British Energy Secretary, who is scheduled to visit Washington on 3 to 7 April, is unlikely to find much to quarrel with in President Carter's style of government. The ideals of open government, the TV phone-in, the attempt to involve the-world-and-his-wife in government decisions, are very much Benn's own style. So is the whiff of revivalism which President Carter has brought to the White House. Benn is no born-again Southern Baptist, but his language often has strong religious overtones: "regeneration" and "rebirth" are favorite words.

On matters of greater substance, Benn and Carter may not be in such close harmony. Benn is the most unrepentant socialist in Prime Minister James Callaghan's government, carrying the banner for such left-wing causes as workers' control, opposition to the European Common Market, high social spending, and a protectionist import control policy. He has in consequence been more reviled in the British press than any other member of the cabinet. The press loves a socialist firebrand only when he is very old or very dead.

Benn is 52, a product of Westminster School and Oxford, the son of a Labour member of Parliament who was created a Lord. When Benn inherited the title in 1960, he spent several years obtaining a change in the law so that he could renounce it. As Minister of Technology in the 1960's he was known as Anthony Wedgwood Benn, but he has since let it be known that he prefers the more proletarian version of his name.

Benn is a powerful and influential figure in the Labour Party, a member of the National Executive Committee, and a much sought-after speaker at trade union or party meetings. He is less influential in the cabinet, and his present post, as Energy Secretary, represents something of a demotion. He was previously Industry Secretary and was moved in an attempt to improve the sour relations between the government and industry in 1974.

He has tackled the job of Energy Secretary with more vigor and imagination than any previous incumbent. In the summer of 1976 he held a National Energy Conference as part of an attempt to bring discussion of energy issues into the open, and he intends to establish an Energy Commission to continue the process. This, he says, will be a forum in which the energy industries, trade unions, and consumers can discuss future policy. And he has recently prepared an Energy Policy Review, due for publication later this year, which lays out Britain's energy options more clearly than ever before. In a discussion with *Science* he elaborated on some of its conclusions.

Ideologically, Benn is a natural ally of the coal industry, nationalized after World War II and a cradle of labor militancy in Britain. (In his office overlooking the Thames near the Houses of Parliament hang two trade union banners presented to him by the National Union of Mineworkers.) He has supported an investment plan intended to reverse the decline of the coal industry and boost production from 121 million tons last year to 135 million tons by 1985. This sounds a modest enough objective but involves an investment of £3000 million in new mines and new equipment.

Despite his support, however, the plan is not going well. The Energy Policy Review concedes that mining productivity is lagging, new investments are falling behind schedule, and it is becoming increasingly difficult to recruit miners. The mining work force is elderly (38 percent are over 50) and replacing them with younger men is a serious problem. Only a small part of the total output (10 million tons a year) is stripped coal, so the industry is still labor-intensive. Given a choice, few people want to spend their lives down coal mines. About the best the industry can hope to achieve is to hold present production levels for the next 20 years until the oil begins to run out.

It is the oil, of course, which gives Benn's present job a little glamour. His policy has been to gain a majority state holding of 51 percent in the oil-producing fields of the North Sea by what are called participation agreements. In exchange for giving up 51 percent of their oil, the oil companies gain goodwill, a chance of future production licenses, and a pro rata government contribution to the cost of exploiting the fields. It is not a particularly attractive deal, and there have been some oil company grumbles, but most have eventually agreed. One company that has not is Amoco, and it has paid the price by being given nothing in the latest round of production licenses, announced in February.

Participation Not Confiscation

Benn is pleased with the way participation has gone, and compares it favorably with acquisition, confrontation, and confiscation (as practiced by the Organization of Petroleum Exporting Countries) and the ideas of divestiture which have been floated in the United States. "I don't think it is fully appreciated that oil in the North Sea was given by the licensees to the oil companies," he told members of the European Parliament last December. "And when people speak as if this was British Government oil the answer is that we have had the greatest difficulty—and not yet succeeded—in trying to get access to the oil for the UK by means of participation agreements."

To act as its agent in participation deals, the government has set up the British National Oil Co. (BNOC). Benn says that there has been a great deal of American interest in the British approach and that in the past 2 years the oil companies have had "a very big rethink." Participation agreements are now either signed or outlined with 17 oil companies, including Gulf, Conoco, BP, Shell, Exxon, Texaco, Mobil, and Occidental.

North Sea oil is expected to have a considerable impact on Britain's balance of payments [equivalent to some 3 to 5 percent of the gross national product (GNP) by the early 1980's], but it is unlikely that there will be much oil left over for export. The Energy Policy Review concludes that hopes of exporting 30 to 40 million tons of oil a year are now unlikely to be achieved because of delays in exploiting the discoveries. It estimates that production will keep up with demand, but with little left over. As a result, the government will probably not need to impose depletion controls, designed to prevent the oil being extracted too fast. The oil companies, which never liked the idea of depletion controls, will be glad about that.

Britain also has extensive gas reserves in the North Sea, presently producing about 3600 million cubic feet a day and expected to rise early in the 1980's to 6000 to 6500 mcfd. Present estimates of reserves suggest that this rate of production can be maintained into the 1990's, when associated

gas from the North Sea oil fields is included. A new gas pipeline, at a cost of £2000 million, will be needed if the associated gas is to be tapped, and present estimates suggest that this will be a worthwhile investment. The alternative would be to flare off the gas.

Nuclear power presents a far less confident picture. Despite Britain's early involvement, it has never managed to establish a viable nuclear industry with a product to sell. Today the industry faces both the problems of public acceptability of nuclear power—common to all developed countries—and the fact that installed generating capacity in Britain far exceeds anticipated demand. Heavy public investment during the 1960's in generating plant to meet a demand which never materialized has left Britain with 40 percent more electrical capacity than it actually needs. Among developed countries, Britain is one of the most electricity-intensive, with an installed capacity/GNP ratio twice as great as that of France, for example. No new orders for plant need be placed before 1980 at the earliest, and if the more pessimistic assumptions about demand growth come true, before 1990.

This is an extraordinary situation with embarrassing consequences for both the electricity utilities and the plant manufacturers. Without expanding electricity sales, the utilities cannot easily make a return on investment, and without orders the plant manufacturers are being forced to lay off men and may go out of business. As a result, the nuclear industry is in an even more bedraggled condition than usual. It is completing five advanced gas-cooled reactors (AGR's) begun in the 1960's and beyond that can see no very good prospects of future business.

Backtracking on Reactor Choice

Two years ago the government decided that the next nuclear plants to be built would be of a different design, somewhat similar to the Canadian CANDU system. This design, the steam-generating heavy water reactor (SGHWR), won approval over the Westinghouse pressurized water reactor (PWR) after a long political squabble. The government has since backtracked and a review is taking place; most bets are that the SGHWR will not be built. With doubts about PWR safety still held by many in Britain, the most likely outcome of the review will be an order for a single AGR to keep the industry ticking over, on the grounds that it may be needed in the 1990's.

Benn's role in all this has been the subject of much speculation. He makes no secret of his sympathy with the nuclear critics but is fortunate enough to be in a position where he is under no pressure to make a decision one way or the other. The Energy Policy Review envisages a maximum of 35,000 to 40,000 megawatts of new nuclear capacity being installed by the year 2000, only about a third of the projections put forward last year by the Atomic Energy Authority. This means, in effect, that Britain has the least nuclear-oriented energy policy in the European Economic Community.

On the fast breeder, decisions are needed fairly soon. Will Britain decide to go ahead with a commercial fast breeder based on the experience of the 250-megawatt prototype at Dounreay in Scotland? The indications are that the government would prefer to develop the breeder on the basis of international collaboration. "We have kept in close touch with the French and the Germans and we believe the fast breeder, of all systems, is one that will most benefit from international safety standards and international collaboration," Benn says.

To achieve public acceptability of the breeder, Benn believes four problem areas need to be clarified. The first is waste management; he considers it absurd that Britain should have been working on nuclear power for so long without having devised an acceptable scheme for waste disposal. The second is the question of reprocessing of fuel; how will it be done, by whom, and how will the resulting plutonium be handled? The third, related, question is how to control nuclear weapon proliferation, on which President Carter is concentrating most attention, and the fourth, somewhat surprisingly, is the civil liberties aspect of nuclear power—whether the widespread adoption of nuclear power is compatible with democratic freedoms.

Benn Steers Clear of Reprocessing Row

On reprocessing, Benn believes that there is "a very strong case" for centering it in developed countries, but is keeping clear of the rows over nuclear exports to Brazil and Pakistan. He has irritated British Nuclear Fuels, who run the Windscale reprocessing plant, by insisting that any incident, however trivial, which involves the release of radioactivity must be reported to him immediately. He has cultivated a wide public debate on reprocessing and nuclear waste, occasionally tipping off journalists as to where they might find a good story. He contrasts his attitude with that of West German Chancellor Helmut Schmidt, who is reported to have described the nuclear critics as "chaotics." "Is Sir Brian Flowers [who wrote a critical report on nuclear power for the Royal Commission on Environmental Pollution] a chaotic?" he asks. "Is Sir Alan Cottrell?" [Cottrell, a former Chief Scientific Adviser to the government and a metallurgist, has doubts about PWR pressure vessel safety.]

Benn has also been more enthusiastic about renewable energy sources—solar, wind, wave, tide, and geothermal—although expenditure on them is still small. A research program costing £1 million has been launched into wave power, particularly well-suited to Britain since the Atlantic brings impressive waves on to the western shores and, unlike solar energy, more power is available in winter when more is needed. Recently Benn's department has announced an expansion in solar energy research, to £1.5 million a year, but this is still well short of spending in France (£9 million a year) and West Germany (£5 million a year). Britain also has one of the best sites in the world for a tidal power station in the Severn Estuary, which has a very large tidal range, but so far calculations by the Department of Energy do not suggest that a tidal power plant there would be economic.

By the year 2000, the Energy Policy Review suggests, renewable resources could be providing about 40 million tons of coal equivalent a year, something under 10 percent of total demand. But the figure is highly speculative.

Conservation is another area, Benn believes, where more needs to be done. "We have to look at energy conservation by insulation in a different way," he says. "If American figures I have seen are correct one of the great benefits of a conservation programme is that it is labour-intensive. Unlike the generation of nuclear power it can involve tens of thousands of workers and at a time when people are desperately worried about structural unemployment we must look at conservation as employment-generating."

—NIGEL HAWKES