

High-energy physics

Machines shut down

A rise in electricity prices of nearly 50 per cent has forced the West Germany high-energy physics laboratory, DESY in Hamburg, to close down its accelerators until the end of 1980. The federal government in Bonn has asked the regional Hamburg government to foot the bill, but Hamburg refused — so DESY had to shut, losing three weeks of accelerator time.

Electricity costs have risen because of a recent agreement between the utilities, coal mining companies and the government. Under the agreement, coal used in electricity production will be raised from its present 33 million tonnes a year to 45 million tonnes by 1985. The utilities will thus have to invest in new power stations and the federal government has allowed them to raise the necessary cash from the consumer.

DESY will have to find another DM 5–10 million (£1–2 million) in 1981 to cover the increased electricity charges. If the money is not forthcoming, the accelerators will have to be run at two-thirds mean power. This would mean either low-energy experiments or relatively few runs at high energy. For example, Nobel laureate Samuel Ting's experiment to find interference between the weak and electromagnetic interactions, as evidence for the intermediate vector boson, requires the highest energies and long data runs and may be threatened unless one or other government pays the increased bill.

The federal government in Bonn, however, which through the Bundesministerium für Forschung und Technologie (BMFT) provides 90 per cent of DESY's budget, is in the red, and has been asking all public institutions to find savings. DESY's DM 143 million budget for 1980 has already suffered two cuts — DM 10.5 million in its DM 50 million "capital projects" budget (achieved by delays) and DM 1.5 million in running costs. BMFT also seems set not to grow this year, its provisional increase for 1981 being slightly less than the current 5.3 per cent annual growth in the cost of living in Germany.

In principle, the Hamburg government could increase its 10 per cent contribution to DESY, as it already benefits from DESY's policy of placing many of its equipment contracts with local industry, and it owns the electricity company which is now charging the laboratory so highly. So far, however, it has not done so.

The DESY crisis may prove to be a test of the new science minister's faith in basic science. Dr von Bülow announced at a press conference last week that he was in favour of "full government financing" for basic research, whereas in energy research, for example, industry must make a contribution.

In the long run, physicists have pinned DESY's future on the construction of

HERA, a DM 600 million machine to collide electrons with protons at high energy and so probe proton and quark structure; the project is being weighed against other big science projects by a committee of BMFT, and no doubt electricity costs will be taken into account. DESY's electricity bill this year will be about DM 22 million, with the full HERA, at current prices, about DM 43 million. So DESY is making a great effort to develop superconducting bending magnets for the proton ring to keep down the bill. It has two designs, one based on the successful dipole constructed at Fermilab in the United States and another under construction at Saclay in France.

Moreover, it is still planned to build HERA in two stages, the first involving 35 GeV electrons and positrons alone and costing DM 290 million. This stage could be ready 5½ years after approval (at the end of 1986 at the earliest) and still offers some competition for the large electron-positron ring (LEP), the next major project of the European nuclear research centre CERN at Geneva. LEP's electricity costs for the same energy would, however, be lower as its ring would be much larger, and it would radiate less synchrotron radiation (the major energy sink in a circular electron machine).

Robert Walgate

Third World

Consumers arise

Kuala Lumpur, November

At a time when the new Administration in the United States seems likely to ease up on the stringent regulation of technological products, consumer groups in the Third World are beginning to voice demands for protection against potentially harmful substances and goods like that already abounded by more affluent societies.

A principal target of such groups in the alleged "dumping" in developing countries of products, such as drugs and pesticides, which have been banned in one or more of the industrialized nations.

Three weeks ago, for example, individuals from twelve developing nations attending a conference in Malaya organized by the International Organization of Consumer Unions (IOCU) signed a declaration urging that there should be no distinction between domestic and foreign consumers in export control programmes for hazardous substances and production facilities.

But the concerns of the embryonic consumer groups in the Third World go much further, ranging from the conventional complaints about the quality of consumer goods to criticism of low-standard imitations of Western goods (for example a drug named "Panadoi", easily confused with "Panadol").

Malaya's Finance Minister, Tangku Razaleigh Hamzah, has called on university scientists and other faculty

members to put their efforts behind the work of such consumer associations, which should be "watchdogs of the people" surveying the unfair practices of businessmen.

Tengku Razaleigh was speaking at a seminar on economics and development organized by one of the largest and most active of Third World consumer groups, the Consumer Association of Penang (CAP).

Formed more than ten years ago on the Malayan island of Penang, CAP now has a full-time staff of 60. Its activities have covered a range of issues familiar to pressure groups in industrialized countries, from assisting fishermen whose livelihood was threatened by the discharge of toxic wastes from a new factory, through working with local labour unions to identify occupational carcinogens, to developing courses and teaching material on consumer rights for use in schools and universities.

One of the successes claimed by CAP was the Malay government's decision to accept explicit responsibility for environmental issues by expanding the portfolio of the Ministry of Science and Technology. Various controls on pollution sources have since been introduced, but less progress has been made on efforts to curb the rapid exploitation of Malaya's diminishing natural resources. As well as tin and petroleum, these include hardwood forests which may disappear completely in ten to twelve years if trees continue to be cut down at the present rate.

Taking a lead from CAP, and in line with widespread concern among the developed nations, many universities have begun courses in environmental sciences in the past decade in Malaya. The University of Malaysia in Kuala Lumpur has recently introduced a course in consumer law as part of its law degree, taught by one of CAP's founders in Penang.

But both CAP and IOCU — whose current president, Mr Anwar Fazal, was another CAP founder — argue that Western concepts of environmental and consumer protection should be expanded to include concern for all aspects of industrial production, from factory working conditions to community health.

Even though Malaya has in recent years passed a variety of laws covering all such areas, CAP claims that government authorities are frequently slow or reluctant to put these laws into effect. Officials reply that the magnitude of the task that they face, and the continued pressures for economic growth, make it difficult to move any faster.

In a country where opportunities for political dissent remain limited — CAP recently moved its Asian headquarters from Singapore to Malaysia — CAP officials tread warily on the boundaries of legitimacy, aware that their required registration as a society could be questioned if their activities become too overtly political.

But given the relative weakness of labour unions and official opposition parties, the consumer movement has become one of the few direct routes for attempting to influence government policies. "We create pressures within the bureaucracy" says Martin Khor Khok Peng, CAP's research director. "If we educate the public, the bureaucrats will have to listen."

David Dickson

Conservation

Bill of rights

The British government is hoping that its new Wildlife and Countryside Bill, introduced in the House of Lords last week, will be law by the end of next summer. Its passage through parliament, however, may not be easy. The bill has taken a long time to compile, preliminary consultation papers having aroused considerable opposition from conservation groups which do not feel that all inadequacies have been ironed out in the latest draft.

The chief effect of the bill is to bring British law in line with that of Europe, but Mr Tom King, minister for local government and environmental services, stresses that many of the new measures are badly needed anyway. The clauses in the bill on the protection of birds, methods of killing wild animals and the introduction of exotic species fulfil European requirements while those relating to nature conservation, the countryside and national parks are designed to improve wildlife management.

Mr King is especially pleased with the clauses relating to the management of areas designated as sites of special scientific interest (SSSIs). The conservation groups, however, say that these clauses are amongst the most worrying in the bill. Under them,

owners of some SSSIs will have a statutory obligation to inform the Nature Conservancy Council (NCC) of any planned operations which may affect the physical or biological features of the site and to wait for up to a year for the consent of NCC. Failure to notify would carry a penalty of up to two years imprisonment and a fine of £1,000 or both.

The conservationists will be seeking to amend these clauses to include all SSSIs, not just those singled out for special treatment, and to include some statutory obligation on the landowner to carry out the management recommendations of NCC. Under the bill, if agreement on management of a site is not reached within one year of notification, the landowner is free to carry out his original plan, although he may risk compulsory purchase by NCC.

On the whole, conservationists welcome clauses in the bill relating to the protection of wild birds, animals and plants, seeing them as a major improvement over existing legislation. The bill will tighten up the laws on the import and export of endangered species, methods of killing wild animals, keeping birds in captivity and selling them either dead or alive. Most of these amendments are in line with the European Community Directive on Wild Birds. The bill also seeks to protect "rare" creatures, such as the otter in Scotland, before they reach the endangered list.

A serious omission in these clauses, however, say the conservationists, is the lack of adequate provision for enforcement. They will be lobbying for the creation of a small investigation unit, probably under the aegis of the NCC, to give support and expert advice to customs officials and police who often miss infringements in the law because of unfamiliarity with wildlife.

Recent controversies about the main-

Fallout from China

China's latest nuclear test on 16 October was "dirty" — according to the official Polish news agency PAP. The dust cloud had previously been monitored in Japan and New York, but the Polish agency reports of work from the Central Laboratory of Radiological Protection outside Warsaw is an example of the new policy of openness adopted by the Polish press. The laboratory has been working in the field since about 1973 with little publicity in Poland.

The Polish team, in the person of its leader, Dr Zbigniew Jaworowski, says that it has observed a significant amount of radioactivity at a height of 15 km. The Polish monitoring method is novel. A converted Mig-18 fighter flies horizontally through the dust cloud, opening a collecting duct at a predetermined altitude. The results suggested a fission-fusion-fission device, and this information was made available to the American group at the Environmental Protection Agency in Washington.

These aerial activities are not Dr Jaworowski's main interest, however. He is principally concerned with monitoring background levels of radioactivity — both natural and that produced by discharge of radioactivity into the atmosphere by "conventional" means — in Poland, largely from the combustion of coal. In September of this year Dr Jaworowski was appointed head of a United Nations commission on fallout, directly responsible to the General Assembly. His measurements of radioactivity levels in glaciers and icecaps throughout the world have met with some controversy, as he says that apart from a few black spots, the global build-up of radioactive fallout over the last century is far less than is claimed by the powerful "doomwatch lobby".

Vera Rich

English floodmeadows: threatened by ditch or protected by bill?



Photo: RSPB

tenance and safety of public footpaths are only partly dealt with in the bill. Although the rights of farmers to keep bulls in fields crossed by public footpaths will be restricted to some extent, beef bulls will be allowed if they are accompanied by cows. Ramblers will be no happier with that provision than with the transfer of general powers over footpaths from central to local government. Ramblers fear that local bias will mean that many paths are lost.

Although many conservationists agree that the bill improves on existing legislation, they consider it far from ideal. The opportunity to revise wildlife and conservation legislation comes up only about every five years so some hard fighting seems inevitable. The bill may have to take more blows than the government seems to have anticipated.

Judy Redfearn