

Renewable energy

Europe's gloom*Brussels*

As preparations begin to launch a new programme for EEC research into the use of renewable energy sources, figures released by the International Energy Agency (IEA) in Paris reveal a slackening in the efforts of the agency's 21 members to develop the potential of solar, biomass and other alternative energy sources. According to IEA, the countries of the industrialized world have reduced research spending from a peak of \$1,102 million in 1980 to \$1,076 million last year, although there is no accompanying decline in the field of nuclear research, where spending rose by 4.2 per cent between 1980 and 1981 to a total of \$4,500 million.

In spite of the encouraging trends in the pricing and supply of oil on world markets, reports from both the European Parliament and the European Commission emphasize that there should be no relaxation of efforts to make EEC less dependent on imported energy. EEC's vulnerability to political pressures shows no signs of decreasing, as is shown by the controversy over the Siberian gas pipeline, although the prospects of a major increase in the price of oil has for the time being receded.

Experts at the European Commission are worried that the complacency revealed by the IEA figures will cause a lack of enthusiasm to invest seriously in renewable energy sources. As EEC's own projects demonstrate, the time is now ripe to make the transition from the laboratory to commercially viable investments. The European Commission is now putting forward a proposal to stimulate energy investment with a financial aid package totalling £600 million over the next five years in areas most likely to be neglected — renewables, district heating systems and converting oil-fired plants to coal. The money would be used to meet the cost of interest rebates on loans.

The research sponsored by EEC has been reviewed in detail in a number of reports produced for a debate held last month in the European Parliament. There are three separate programmes — one on solar energy at the Joint Research Centres costing \$25.5 million, a series of demonstration projects budgeted at \$22.5 million and run by the Energy Directorate General, and a joint action programme worth \$45 million run by DG XII (Directorate General for Research, Science and Education). These programmes are likely to be brought under one roof in the third research and development programme beginning in 1983.

The new programme is likely to continue to invest most heavily in the areas which have received most support in the past, but perhaps in different proportions. Spending so far shows a strong bias towards solar

energy, with 34 million ECUs (European Currency Units) (£60 million) going on photovoltaic cells, 43 million ECUs on solar panels and other thermal applications and the remainder split between biomass (24 million ECUs), thermodynamic power plants (12 million ECUs) and wind energy (1 million ECUs).

Biomass is likely to receive greater attention in the next programme — the Commission calculates that if it is possible to provide 17 per cent of the Community's total energy needs from renewables, as much as 8 per cent could come from biomass, half from existing wastes and half from crops grown for energy use. A detailed report produced for the European Parliament on the future of biomass by Madron Seligman (UK, Conservative) stresses that there is a need to get demonstration projects under way and to assess which source of biomass would be the most promising in which regions or agricultural systems and with which technology.

He points out that there is a constantly widening choice of research techniques using an expanding range of biomass sources including sugar, artichokes, maize, vegetable oils, trees, reeds and agricultural wastes. Only a few sources will be suitable for large-scale industrial exploitation, but many others could be viable on a small scale. The European Parliament's resolution calls on member states to provide 130 million ECUs for a five-year biomass programme starting in 1983. This would include 20 million ECUs for agricultural grants which would be used to encourage farmers to switch from producing agricultural surpluses to produce energy crops, or to grow energy crops as well as their normal crops.

Seligman points out that subsidies are already being used to support surplus production of sugar beet and other crops and would be better applied to helping EEC to become more self-sufficient in energy. They could even be used to persuade farmers in Thailand, for example, to convert their manioc into gasohol and thereby reduce pressure on Community-produced cereals and also reduce their own energy imports.

Jasper Becker

*Bioriches***Banker's hope**

Take biotechnology, \$50 million and a Rothschild — even the one who knows what biotechnology is all about — and surely you have a recipe for a goldmine: that seems to be the calculation that inspired the formation of Biotechnology Investments Limited a year ago. The company, of which Lord Rothschild is chairman, is an offshoot of N.M. Rothschild Asset Management Limited, which is in turn the venture capital part of the merchant bank called N.M. Rothschild & Sons Limited, the host for the twice-daily meeting of the cartel that fixes the price of

gold on the London metal market, whose chairman (until he recently became its president) was the biological Rothschild.

The calculation appears to have been good, and may yet prove accurate. The company's first annual report, now published, promises a dividend of 10 cents for each nominally 2 cent share (for each of which investors will have paid \$10.00), a yield in the first year of rather less than 1 per cent. And that has been made possible only because Biotechnology Investments earned the best part of \$2 million by investing in the money markets. The \$16 million invested in biotechnology companies at the end of May produced only \$38,000 in the financial year. But it seems to be agreed that this will be a long haul.

Lord Rothschild, distinguished for his work on the fertilization of mammalian ova and best known for his reorganization of British public spending on civil science in 1971, when head of the government's Central Policy Review Staff ("think tank") is now interestingly to be observed in that nexus where his instincts as scientist and banker are nicely balanced. He has a small team of bright people to assess investment proposals (and with whom to gossip), but a banker's unwillingness to take too many risks.

One consequence is that, so far, venture capital has been invested only in US companies, including \$250,000 in Advanced Mineral Technologies (founded by Dr Corale Brierly in New Mexico), £1.17 million in Agrigenetics (David Padwa) and \$2.01 million in Repligen (founded by Drs Alex Rich and Paul Schimmel of MIT). The company is a little embarrassed that it has not yet backed a British venture, and has become an eloquent source of opinion about the dearth of entrepreneurship in Britain. (Briefly, tax rates are less important than attitudes.)

The company's annual report is a useful banker's view of how this handful of private companies is making headway. Only one unquoted investment, in the Seattle-based monoclonal antibody company Genetics Systems, has been written down (and then only by 2 per cent); that in Agrigenetics is now valued at \$1.92 million.

The investment fund's strategy, spelled out in the annual report, is to invest primarily in new and start-up companies, where it is acknowledged that the risks but also the rewards are potentially higher than in the public companies whose shares have cost Rothschild \$8 million (and which include Amersham International). The objective is to find companies with "scientists of high calibre" but also first-rate business managers. The Rothschild bank will be rewarded on a kind of deferred payment plan, collecting a fifth of the increased value of investments in new companies only after five years, and if the fund's shares are then worth more than \$15.00 each.