

French energy policy

Slump threatens nuclear freeze

FRANCE, the citadel of civil nuclear power in Western Europe, need not order another nuclear power station until 1987 at the earliest. That is the most startling of the conclusions of the "long-term energy group" of the planning ministry which put out an interim report on its work last week. The group's report says that France can get by for the next four years with its present complement of nuclear power stations (and the six under construction) unless economic growth exceeds 2.2 per cent this decade and 4.6 per cent in the 1990s. The chances of that happening are slim. Economic activity increased by 0.3 per cent in 1981, 2 per cent last year and is officially estimated at zero in 1983.

The nuclear industry is not the energy group's sole target. Gaz de France has signed agreements to buy in 1990 the equivalent of at least 29 million tonnes of oil a year as natural gas from Soviet, Algerian, Norwegian and other sources, but the group predicts an annual consumption of only 22 million tonnes of oil equivalent by then.

As the group sees it, the problem is twofold. The price of oil has fallen with respect to the dollar by 20 per cent in two years, undermining the incentive for large consumers to turn away from oil. And the economy has stopped growing, dashing hopes of a 5 per cent growth rate.

The planning group offers only one consolation — that the Mitterrand presidency's present policies of investment in innovation and research may begin to bear fruit after 1990.

What is to happen meanwhile? The report says that the energy industries can be supported only by a costly policy of minimum construction to keep them alive. For the nuclear industry, it recommends just one reactor a year — compared with three at present and as many as six in the heyday of nuclear expansion. The nuclear industry, naturally, does not consider this enough. Even at two a year, one company claims it would need to make 3,500 redundancies. Framatome, which builds the nuclear steam supply systems, has pronounced itself "anxious".

In the wake of the report, the great French effort in renewable energy (particularly biomass) and conservation may now be harder to defend than in the past. Indeed, some are even suggesting that the government should now provide incentives to consume energy, and that France should also export the stuff.

However, Michel Rolant, director of the energy-saving and alternatives body, Agence Française pour la Maîtrise de l'Énergie, has welcomed the report, and added that France must avoid "wasting investment" in nuclear plant, when the public financial situation and French indebtedness overseas are already so bad.

As for the government, the secretary of state has described the report as "illuminating".

Robert Walgate

● Pierre Mauroy, the French Prime Minister, announced figures last week that suggest his austerity programme — dubbed "rigueur" in France — is beginning to work. The overseas trade deficit fell from FF 6,500 million in March to FF 1,500 million in April. Exports rose 2 per cent. Special factors — such as unusually low oil imports — improved the picture, but the auguries are felt to be good, after a long period of despair. □

China stays friendly

Washington

CHINA seems to have decided not to allow political strains in its relations with the United States to damage the science and technology agreement signed by the two countries in 1979. A US delegation, led by presidential science adviser George Keyworth, returned from Peking (Beijing) last week with new agreements on nuclear physics, transportation, aeronautics and biomedical research under its belt.

The visit, a largely ceremonial annual event, came at a particularly bad moment diplomatically. The Chinese are still smarting after the defection to the United States of their tennis star, Hu Na. Relations have suffered again in recent weeks because of a legal dispute over the validity of a number of Hu-Guang railway bonds purchased by US citizens 80 years ago. Meanwhile, there has been little progress in the disagreement over Taiwan.

At a plenary session opening the Peking meeting, however, Fang Yi, former head of the Chinese Academy of Sciences and a signatory of the original agreement, was content to scold the United States for its curbs on technology transfer to China. In subsequent working meetings, said one US participant, the Chinese appeared to want business as usual.

Complaints about US restrictions on technology transfer were raised during the visit to China of Secretary of State George Shultz in February. On that occasion, Mr Shultz told the Chinese that the United States was restricting its technology curbs to those necessary for national security purposes. He claimed that the number of advanced technology export licences issued to the Chinese had trebled in three years, reaching 1,700 in 1982.

Measured by the number of exchanges between China and the United States, the 1979 accord has helped China more than the United States. There are more than 10,000 Chinese students and scholars in the United States, of whom 4,700 are government-supported exchange scholars. The number of Americans visiting China is around 500.

Peter David

Biotechnology

Biotech set to go public

WHO would pay \$40 million or a proportion thereof to own a corresponding share in a debt of \$10 million? Only a biotechnology investor. Many of that kind will be hammering on brokers' doors when Damon-Biotech, an enterprise based at the Massachusetts Institute of Technology (MIT) with ex-MIT president Jerome B. Wiesner on the board of directors, offers 2.4 million shares of its common stock to the public in the next few weeks.

Biotech, as it is commonly known, began life in 1978 with an ambition to produce and market monoclonal antibodies. Five years later, its chief claim on public attention seems to be a process for encapsulating cells in plastic porous membranes in such a way that they live, multiply and continue to secrete but are immune from damage.

The encapsulation process, patented and registered as Encapcel, described in the draft prospectus circulated on 28 April as an enabling technology, has certainly enabled the company to go public.

Since 1981, the company has had a contract with Hoffmann La Roche to produce gram quantities of antibodies against human alpha, beta and gamma interferon. This led in 1982 to a scale-up contract intended for producing kilogramme amounts of interferon antibodies. In the half-year to the end of February, Biotech claims sales of \$1.4 million, ahead of production and administration costs by \$350,000; research and interest charges led, however, to a loss of \$1.2 million.

The chief hope for the future is, however, the technique of encapsulation, described as a means by which animal cells may be cultured on a fermentation vat scale. Its invention is credited to Dr Franklin Kim of the Medical College of Virginia.

The technical trick is to immerse biological materials such as cells in a medium that can become a gel, to form small droplets of the medium and to make them gel, to coat the droplets with plastic and to reliquify the gel.

Although Biotech claims to have made a profit since and including 1980, overheads, research and interest have made its net loss fluctuate between \$1.4 and \$2.5 million a year. At 28 February 1983, the accumulated loss exceeds \$8 million, since when Damon has provided further sums to keep Biotech afloat.

\$10 million and now wants it back. It also holds 13 million shares which cost it \$130,000 and will own 70 per cent of the equity if the draft prospectus becomes reality. The offering at between \$16 and \$18 a share thus values Biotech at between \$400 and \$500 million — a little on the high side. □