

## Japanese energy

**Go-go go for nuclear power**

Tokyo

JAPAN'S white paper on nuclear power released this week is full of the boundless enthusiasm for nuclear energy that seems to have evaporated in the West. The call is for more nuclear power stations, the rapid development of an independent capacity to process and enrich nuclear fuel and increased effort to develop fast-breeder reactors.

The logic is simple enough. At present, nuclear power stations provide Japan with its cheapest source of electricity. According to the report, this year nuclear-generated electricity cost 13 yen (\$0.6) per kwh, against coal-generated electricity at ¥14 per kwh and liquid natural gas generated electricity at ¥17 per kwh.

The calculation for nuclear energy does not, however, include the price of decommissioning old nuclear reactors; adding this in gives nuclear power just a very slight edge over coal. Thirty-one nuclear reactors in Japan are between them supplying 23 per cent of the total electric power. That places Japan fourth after the United States, France and the Soviet Union in its total nuclear power generating capacity.

Japan's situation is, however, unique, for the nation has almost no fossil fuel reserves and must import 90 per cent of its energy, much more than any other large industrialized country. In the report's view, the cost of those fossil fuels is bound to rise over the next decade and the advantages of nuclear power become ever more apparent, although oil prices are now falling as the OPEC nations try to boost sales.

The key to Japan's cheap nuclear power is operating efficiencies that are the highest in the world. As nuclear fuel costs are small, the price of nuclear-generated electricity stems from the cost of plant construction and running and thus the percentage of time for which it is in operation. In Japan, power generation is suspended fewer than 0.1 times per year per reactor, just a tenth of the frequency of reactor troubles in the United States and attributed by plant operators to the superior training and conscientiousness of Japanese staff.

Enthusiasm for nuclear power seems to be shared by citizens too, most of whom, according to a government survey, think more electricity should be nuclear generated. Indeed, nuclear power seems to have a rather good image; when those surveyed were asked to list the uses of nuclear power, treatment of cancer was listed second after power generation.

As a government document providing a source of information for decision makers, the white paper might perhaps have painted a slightly less rosy picture. One proud boast of the government is that since commercial reactors began operation in 1966, "there have been no accidents or

failures in which operators or people living nearby were affected by radiation". That, strictly speaking, is true, but it avoids mention of the leaks on board the nuclear ship *Mutsu* and the 1981 leakage of radioactive water from a storage tank into the sea. Nor will its simple description of fast-breeder reactors as the mainstream power source of the future "fundamentally solving the problem of nuclear fuel sources" appeal to many, including those in Japan, who have tried to estimate the likely economics of these reactors.

Alun Anderson

## Polish science

**Congress delay**

THE third congress of Polish science, scheduled for 9–10 December, has been postponed until March 1986, due to the "need for more thorough preparation of the plenary reports and also the papers being completed by the 16 problem teams". The purpose of the congress had been to review Polish science with special reference to the research applications in the economy.

The old hierarchy of graded levels of priority for research problems from "government" and "key" problems down to "departmental" problems, introduced after the second congress in 1973, has proved unworkable; some new research structure is clearly necessary. But it is apparently proving difficult to devise a viable alternative.

The first congress of Polish science (June 1951) served not only to assess the state of science but also to impose a rigidly Marxist philosophy on Polish research and learning. There are widespread fears (particularly after last month's dismissals of university administrators) that the forthcoming third congress might launch a similar purge.

Although the official reports for the congress may not be ready, one unofficial report has already appeared in the underground press. This is a 10,000 word pamphlet from the unofficial "Social Commission for Learning", which attempts to outline the effect of the crisis and martial law on Polish science and learning, including the "reorganization" of the Institute of Nuclear Research, the run-down of investment in science, the cessation of doctoral research in the universities in 1982 (it has only partially been restored), and in particular, the situation in the 200 or so research institutes responsible to some ministry or government department rather than to universities or the academy.

The pamphlet, although written in a detached and academic manner, gives a depressing picture of Polish science.

Vera Rich

## AIDS

**Pasteur sues over patent**

Washington

THE Institut Pasteur in Paris has filed suit in the US claims court in Washington DC, contending that researchers at the US National Cancer Institute (NCI) used Pasteur's specimens and data to develop and patent a commercial test to detect antibodies to the AIDS (acquired immune deficiency syndrome) virus. The suit asks the court to declare that Pasteur researchers Luc Montagnier, Jean-Claude Chermann and François Barre-Sinoussi were the first to isolate the AIDS virus and to recognize its significance in developing blood tests for AIDS antibodies.

Institut Pasteur researchers were the first to publish an initial characterization of the AIDS virus and filed a patent application for a test in December 1983; the application remains pending. The NCI researchers, led by Robert Gallo, filed a similar application in April 1984 and received a patent 13 months later.

Montagnier has claimed that he sent his viral isolate to Gallo as a scientific courtesy for research purposes in July and September 1983. But Gallo says the rate of production of virus in the cultures he received made them useless practically, and that development of a test and reliable characterization of the virus was impossible until his laboratory found a cell line that could produce the virus in quantity.

Montagnier's original isolate has subsequently been found to be very similar to Gallo's, but Gallo angrily rejects suggestions that his isolate was in any way derived from Montagnier's. Gallo says other isolates have been found that are both more and less similar to Montagnier's than his original, and that the similarity is nothing more than might be expected given that both originated from patients in New York City.

Gallo's patent, which was turned over to the US government, forms the basis of the tests currently in use in the United States for AIDS antibodies. The commercial value of the patent is counted in millions of dollars.

Other tests are expected to enter the market shortly that are derived from the Pasteur isolates, and one manufacturer, Genetic Systems, has said it will not be paying royalties on its test to the US government.

Pasteur had been negotiating unsuccessfully with the US government for the past four months to reach a compromise agreement on royalties from existing tests, which it believes should be shared equally between the US and French institutes (see *Nature* 317, 373; 1985). It appears that the question will now be settled in court: no date for a hearing has yet been fixed.

Tim Beardsley