

Keeping faith in technology

Paris

TECHNOLOGY and industrial research are given special attention once again in a French budget that otherwise contains few big surprises. But spending in all sectors, except atomic energy research, will be increased comfortably above inflation.

Support for technology, says research minister, Hubert Curien, "puts the accent on a sector upon which the nation's future depends in the face of international competition" in a "difficult international and economic environment".

The overall civil research budget is up by 7.3 per cent from last year to FF48,672 million (\$8,691 million). If new incentives offered to industry are taken up, such as tax relief, venture capital and grants for "strategic technology" development, the research minister expects spending on research and development to reach 2.45 per cent of gross domestic product (GDP) in 1991, against 2.38 per cent last year.

The Mitterrand administration has set itself a target of 3 per cent of GDP for research spending, although the deadline has become vague. Government figures show France in front of Britain, but still behind West Germany by this index.

Basic research organizations themselves decide how to divide up their 1991 allocations. The largest, CNRS (the national centre for scientific research), will receive a 7.1 per cent increase to FF11,063 million. The medical and health research agency (INSERM) is to get a 10 per cent increase, to FF2,010 million, but will also administer an extra FF110 million earmarked for AIDS research.

But the government has placed some restrictions on the spending options of the national agencies. CNRS is asked to give priority to cognitive science, biological macromolecule engineering and the environment. The Pasteur Institute will be opening a new building for retrovirus research, focusing on AIDS.

The budget is also designed to inject young blood into an ageing population of researchers. Until recently, doctoral training was long, and competition for research posts intense. Now, doctoral research grants are to be awarded for two years and renewable for a third. "PhD theses must be short", says Curien.

Next year, 319 researcher and 330 engineer, technician and administrator posts will be created, a growth of about 4 per cent. Also, a set of measures is to be introduced to shuffle researchers upwards, giving a less uneven spread of ages across grades. The age limit for entry to the lowest research grade (CR2) is to be set at 36, falling to 31 years by 1995. All researchers over 40 in the CR2 grade will be promoted to CR1 next year. The ratio of senior to junior grades will be adjusted

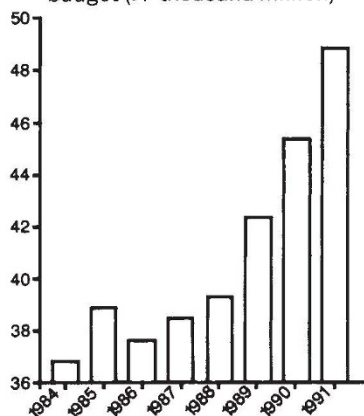
to increase numbers at the top.

But the accent in this budget is firmly on technology and industrial research. National measures include raising the threshold for tax relief on research investment to FF40 million per company (previously FF5 million and FF10 million for small and large companies respectively). A partnership scheme for doctoral training shared between industry and the state will also be expanded, while ANVAR, the national agency promoting technology innovation, gets a FF150 million boost in 1991.

France's leading role in Europe's high-technology effort is also evident. France is involved in 156 of the 386 EUREKA programmes, with the government contributing about FF750 million to the FF43,000 million national bill. Curien regards high-definition television as an essential element in Europe's effort to keep its electronics industry alive.

Another favoured project, JESSI (Joint European Submicron Silicon Initiative), could get extra French money next year.

France's civil research budget (FF thousand million)



Now that Philips has pulled out of JESSI's static memory programme, it looks likely that the Franco-Italian electronics giant, SGS-Thomson, will step in.

The national space research centre (CNES) will get an extra 13 per cent next year (bringing the total budget to FF8,119 million). Meanwhile, France has new commitments to the European Space Agency in 1991: 19 per cent of the data relay transmission module (DTRM) and 22.3 per cent of the second European remote-sensing satellite (ERS 2). The space plane Hermes, the heavy-lift launcher, Ariane V, and the Columbus contribution to the US space station Freedom come to the end of their study and definition phase in 1991. If governments agree to go ahead with construction, as expected, France will similarly have a lion's share. Next year, Hermes will cost France FF923 million and Ariane V, FF1954 million.

Peter Coles

Down from the mountain

New Delhi

FOUR chunks of rock brought last week from the Himalayas may be a step towards resolving the "case of the peripatetic fossils", which has pitted the Australian geologist John A. Talent, of Macquarie University against Vishwa Jit Gupta, professor of geology at the Panjab University in India. The question at stake is whether fossils that Gupta claims were collected in remote regions of the Himalayas are genuine, or instead came from museums and curio shops. According to Talent, the result of 20 years of publication by Gupta is that "the palaeontological literature on the Himalayas has become shot through with disinformation" (see *Nature* 338, 613; 1989; 343, 305; 343, 405; 1990).

The new specimens will provide key evidence in the scientific investigation launched by the Panjab University in Chandigarh into the alleged fossil fraud. "We will very soon be able to establish the truth and resolve the controversy", said Dr A. S. Paintal, leader of the team that has returned from the one-week expedition to the Himalayas. The expedition was proposed by the Indian National Science Academy, organized by the Panjab University and financed by the University Grants Commission.

Paintal, a fellow of the Royal Society, is a physiologist and head of the Indian Council of Medical Research. He was chosen to lead the team in his capacity as president of the Society for Scientific Values, an independent organization created in order to check misconduct in scientific research. Two of the team members are from the Geological Survey of India and four are geologists from Panjab University. Gupta, who was unable to join the team because of poor health, was represented by N. Kocher, his former research collaborator, whose main function was to guide the team to the areas where Gupta claimed to have collected the fossils.

Paintal said the aim was to collect as many specimens as possible from disputed sites. As it turned out, the team could visit only the Lahul-Spiti area in the state of Himachal Pradesh at an altitude of about 40,000 feet. Whether the rocks have embedded fossils that can be compared with those in Gupta's possession will be known only after laboratory tests begin.

Meanwhile, the team is planning to go ahead with chemical analysis and dating of the rocks as well as of Gupta's own fossils. Paintal, who expects that foreign scientists will participate in the tests on the samples, hopes the investigation will be complete by October.

K. S. Jayaraman