Dutch favour applied research for natural gas 'dividend'

Paris. Next year's Dutch research budget will impose yet more cuts on fundamental research, share out extra income from the country's natural gas resources mostly on applied research, and provide big new tax incentives to companies to do more research. These moves continue the trend of reduced overall spending on science and increased emphasis on wealth creation.

In 1987, the Netherlands spent 2.33 per cent of its gross national product on research. Now it spends 1.8 per cent. The enormous costs of its social welfare system and its small population of taxpayers has made Dutch research more vulnerable to the downturn in economic growth. Researchers fear that the fall in spending may speed up if industrial funding, which has remained stable, also begins to drop.

The proposed budget for 1994 does little to dispel such pessimism. The Ministry of Finance has imposed a cut of 1 per cent next year on all public spending classified as 'subsidies'. This cut, which will probably increase to 5 per cent in 1998, will affect the Dutch fundamental (NWO) and applied (TNO) research organizations and the Royal Netherlands Academy of Arts and Sciences (KNAW), but not the universities.

The way in which research funding became classified, improbably, as subsidies "is something that nobody understands", says Peter Tindemans, the director-general of the Ministry for Education and Science. The NWO and the KNAW have publicly protested against the decision. They have also asked Marius Cohen, who became secretary of state for education and science in July, and who is responsible for science policy, to change this classification. Tindemans agrees that it is inappropriate, but says that the ministry of finance is

reluctant to review the decision.

Research budgets are already under pressure because the government has abolished index linking. Moreover, it has transferred responsibility for paying employment benefits from the Ministry of the Interior to the research organizations and universities. The government has accompanied the measure with extra money, but many feel that this is less than the true additional costs.

Hein Meijers, a spokesman for NWO, says that the measure will also discourage research organizations and universities from hiring postgraduates and postdoctoral fellows because they would have to pay them benefits if they did not find jobs afterwards.

University budgets would suffer further if, as proposed, they take over responsibility for maintaining their buildings from the government. But again, the budget proposed to accompany the measure is insufficient. Unless it is increased, universities would have to choose between letting their buildings deteriorate and diverting money from other budgets.

The Netherlands spent DFL10.9 billion on research last year. The new cuts will amount to around DFL5.5 million next year and DFL67.3 million in 1998. These may be offset, however, by the government's plans to spend around DFL250 million on research from a special infrastructure fund which has been set up using extra income from the country's natural gas resources.

The government has also announced that it will let companies pay 10 per cent less income tax on their contributions for staff doing research. Researchers have generally welcomed the move, although some say that companies might simply pocket the savings — an estimated DFL350 million a year.

Declan Butler

French debate cools over nuclear waste storage

Paris. Public opposition to the French government's plans for storing high-level nuclear waste appears to be evaporating. Four years ago the government abandoned plans to drill four candidate storage sites because local opposition spilled over into riots. Now as many as 30 local authorities are clamouring to host sites.

The main cause of this shift is a decision announced by the government on 30 December 1991 to impose a 15-year moratorium on deep-storage of long-lived nuclear waste; such waste will continue to be stored on site for the time being. The moratorium has bought the government time to discuss the issues with the public in a more open and relaxed atmosphere.

This contrasts with the situation during the 1980s, when the National Agency for the Management of Nuclear Waste (ANDRA), then part of the French Atomic Energy Commission (CEA), pursued a policy of deep-storage as the exclusive solution to managing nuclear waste.

Last year, the government split ANDRA off from the CEA, and appointed foreign scientists to its scientific board. Now Christian Bataille, a member of parliament whose report shaped the 1991 law, has begun negotiating with local authorities to select sites next year for two underground laboratories.

ANDRA proposed building these test laboratories over five years, and then to carry out geological tests for a further eight. A decision on whether to pursue deep-storage, and if so where, would not be taken until 2006. In addition, the government has promised to study ways of reducing the volume and longevity of waste in the interim period, for example by transmutation to shorter-lived elements (see *Nature* 365, 381; 1993).

Many feel that deep-storage remains the best solution, and are sceptical of the technical feasibility of alternatives. But they also agree that the commitment has reassured the public, and that the attention to new technologies may bring benefits.

The government has also said it will consider designing any storage sites — which would be built around 2016 — in such a way that the waste could be easily retrieved if future technologies allow it to be treated.

Concern over rising unemployment, as well as the prospect that underground laboratories will bring local jobs and investment, has been the other main reason for the enthusiasm of local authorities. Such arguments have been aided by the political isolation of the Greens following their unexpected poor showing in the general elections earlier this year. **Declan Butler**

Russia heads for CERN membership

Munich. Four months after declaring its interest in becoming a full member of the European Laboratory for Particle Physics (CERN), Russia has signed a scientific and technological cooperation agreement that will prepare the way for membership in the near future. It has also pledged its support for CERN's plans to construct the Large Hadron Collider (LHC).

The three-year agreement was signed in Moscow on 30 October by the Russian science minister, Boris Saltykov, and CERN's director-general, Carlo Rubbia. It is seen as a transition period between the long-standing collaborations of the past 30 years and full membership.

Full membership is at present unreal-

istic because Russia would not be able to afford the fees. Russia's particle physics programme has been almost paralysed by the collapse of the Russian economy since 1990. For example, plans to extend the power of Russia's largest accelerator, the UNK, housed at the Institute for High Energy Physics in Protvino near Moscow, have had to be scaled down from 3,000 GeV to 600 GeV, even though the tunnel has been built.

The umbrella agreement has no specific sum of money attached to it. But Saltykov has promised at least to maintain Russia's current level of commitment to particle physics research both at home and at CERN in Geneva. **Alison Abbott**