assuming the decree is forthcoming — has three targets.

First, there is an adjustment to the 1981 national budget, due in July. Here Chevènement does not expect much money, but he has promised 525 new research jobs among his agencies, 200 of them for scientists (the rest for technicians). In the agencies over which he has full control (such as CNRS) he will favour the social sciences, basic biology, medical sciences and (surprisingly) environmental science.

Second, there is the full 1982 research budget, to be fixed in August this year. Here Chevènement plans the full 10 per cent growth, in real terms, and plans to make biotechnology, microelectronics and robotics priority subjects, and to support ailing but important subjects such as chemistry.

Third, in 1982 he will seek a "loi de la programmation de la recherche", in which the National Assembly would vote a firm five-year plan and budget within which his ministry could operate without fear of political setback year to year. Such a "loi programme" has not been tried before outside defence, and it will be a supreme test of Chevènement's undoubted political powers to get such a law approved.

To that end, he is calling a national colloquium of scientists and others interested in science policy for December this year, to thrash out a "new politics" for science and rally support. **Robert Walgate**

US science research

Keyworth reassures

Washington

In his first public appearance since being nominated as President Reagan's Science Advisor and director of the Office of Science and Technology Policy, Dr George A. Keyworth II said last week that the new Administration "views basic research as a vital investment with a good return", that it would seek to increase industry's involvement in research and development and that greater international collaboration was essential in such capital-intensive fields as high-energy physics and space research.

On a less positive note, he warned that the United States could no longer expect to dominate research in all scientific disciplines and should accept that "our country has relinquished its pre-eminence in some scientific fields". He also stressed that support for research should be aimed primarily at those areas considered important for industrial, military or other essential technologies, or where efforts were proving particularly productive, such as computer science and genetic engineering.

Dr Keyworth's remarks were made in a speech to a meeting organized by the American Association for the Advancement of Science (AAAS) to discuss recent trends in the federal research and develop-

ment budget. Many of those present were impressed that although Dr Keyworth, a 41-year-old nuclear physicist who has spent most of his career at the Los Alamos Scientific Laboratory, has virtually no experience of Washington science policy circles, his remarks demonstrated a grasp of many of the issues facing the Administration.

Asked about attempts by the Office of Management and Budget to apply strict cost-accounting procedures to university scientists, for example, Dr Keyworth replied that he himself had never been required to punch a time-clock, but that there were arguments about public accountability that needed to be closely considered. He also expressed concern at the possible damage to international relationships that might follow budget-based decisions to withdraw from projects such as the International Solar Polar Mission, being planned jointly with the European Space Agency.

In his speech, Dr Keyworth emphasized that he saw his role as an "objective adviser" in the White House rather than an inside lobbyist for the engineering and scientific communities. "The Science Advisor in this Administration perhaps more than in any other will be an important member of a *team* of domestic and international advisers", he added.

The content of his speech made it clear that Dr Keyworth is likely to pursue many of the same goals as his predecessor, Dr Frank Press. Referring to the need to reduce the burden of "unnecessary" regulation on the private sector, he said that the Office of Science and Technology Policy would continue to work closely with others in the Administration to strengthen the scientific foundation of federal regulatory decision-making.

However, Dr Keyworth, who has been closely involved in nuclear weapons research at Los Alamos, said he believes that "our country's military might should be second to none", and has also been reported as saying that within the new Administration "science and engineering that support the development of a stronger defence have top priority."

In previous administrations such remarks might have been taken as a warning signal by the biomedical research community. But the commercial potential of genetic engineering, being a rapidly expanding field of high technology, seems to have kept such research in favour. "In general, I think we will see continued strong support for the biological and biomedical sciences", Dr Keyworth said.

Other speakers from the Administration who addressed the AAAS meeting supported the contention that basic science had little to fear from Mr Reagan, and that cuts in the research and development budget were intended to fall primarily in those areas where private industry might shoulder responsibility.

Many of those attending the conference,

however, were not totally convinced. Several questions were raised about the Administration's proposal to eliminate science education programmes at the National Science Foundation (some of which appear to have been salvaged by Congress). Others, such as Dr Ronald W. Lamont-Havers, director of research policy at the Massachusetts General Hospital, expressed concern that even though the Administration might believe in the need to support scientific excellence, budget constraints on research funding were likely to result in high-quality research not receiving adequate federal backing.

David Dickson

EEC university qualifications

Degree of agreement

Brussels

Education ministers from the European Community's ten member states, meeting in Luxembourg in June, considered the tricky problem of improving the mutual recognition of diplomas and periods of study undertaken at higher education institutes.

In theory the principle of the freedom of employment set out in the Treaty of Rome should guarantee that a qualification gained in one member state should open the same economic doors in another state, but this is far from being the case. As one example, a teacher with a degree from the University of Lille who spent her working life in Belgium was not granted her full pension rights because the Belgian state did not recognize her qualification.

No one has been foolhardy enough this time to suggest establishing a Euro-degree on the lines of the much-maligned Euro-loaf or Euro-beer. The low-key approach adopted by the European Commission is to improve the availability of information. EURYDICE, the European information network on education which became operational last year, would link up with national units to provide information in five key areas — entry requirements for first degrees, transfer without loss of acquired rights from a course started in one country to a similar course in another member country, requirements for post-graduate studies or research in another member state, finding work in a member state with qualifications obtained in another, and details of career development.

The Education Council has approved these ideas and the Commission has until March 1982, when the education ministers meet again, to put forward some precise ideas on implementing the scheme.

But this leaves the crucial problem untouched. Should the Community risk an outcry from the academic world by forcing universities to accredit each others' degrees with the same value and worth? Desirable though that would be as a means of increasing the mobility of European

academics, it would ride roughshod over the treasured traditions and autonomy of the institutions.

As a principle or ideal it was welcomed by the ministers and has few opponents in the academic world. The difficulty is that the Education Council realized that the edict cannot be enforced by law. Efforts over the past twenty years to encourage bilateral or multilateral agreements have not kept pace with the growth of higher education and diplomas. The Commission has now been instructed to persevere in its efforts to find ways of encouraging more agreements.

Jasper Becker

High-energy physics

CERN in a hole

The Large Electron Positron ring (LEP), the future project of the European centre for subnuclear research (CERN) near Geneva, has run foul of a small group of environmentalists formed a decade or two ago to protect the Jura Mountains, north of the CERN site, as a national park. Last week the group obtained an injunction at a Lyon tribunal which annuls CERN's licence to bore an exploration gallery for the LEP tunnel into the Jura.

The Lyon decision rests on a technicality. It stipulates that the exploration gallery is not a "temporary construction", as it must be according to the law under which CERN began drilling, but a permanent one. CERN counters that if the tunnel revealed that the construction of LEP would be impossible, then the work would indeed be temporary. However, CERN intends to use the 4 km tunnel as an entrance gallery if LEP goes ahead — so their position was not too strong.

Meanwhile, CERN has not been informed officially of the injunction. Being an international organization, its relations with states — including Switzerland and France — on whose territory it rests, are mediated through the foreign ministers of those states; and there will now be an internal wrangle in France either to get the Lyon decision overruled, or to gain approval for the gallery under another law.

The conservationists, the Association de Protection de la Nature Gessienne (that is, of the Pays de Gex where the gallery was to be drilled), are worried about potential damage to natural springs in the region, and atmospheric pollution from LEP power supplies and cooling systems.

The group timed its injunction well: it coincided with the mid-year CERN council meeting at which national positions on the LEP project were being sounded. In the event, the French delegate at the council, M. Yves Jacques, promised to appeal against the Lyon decision at the highest court — the Conseil d'Etat — and the voting was as previously expected: eight clearly in favour and four undecided. Of

the latter, Denmark expects parliamentary approval soon; after a confusing general election, the Netherlands wishes to delay a decision; Sweden is in similar position after the collapse of the Conservative government; and Norway wishes to wait until after its general election on 14 September.

A committee of the CERN council is to meet in October, and if member states are then ready, a full meeting could be convened to reach the unanimous approval that CERN seeks. (Strictly the eight-to-four majority is sufficient, as LEP will come within the normal CERN budget; but unanimity on such a big commitment — more than SF 600 million (£150 million) for five years or more — is thought politic.) At that final meeting, which could be delayed to December, the central issue is likely to be not whether the states all approve of LEP, but at what budget they want it built — which affects the speed of LEP construction. Argument on the budget was heated in the meeting last week, and no agreement was reached. **Robert Walgate**

Polish economy

Culling ministries

The Polish government's plans for economic recovery will be based on a major restructuring of the country's production ministries, Prime Minister Jaruzelski announced in the Sejm (parliament) recently. During the past few years, there has been a tendency for Polish ministries to proliferate — for example, separate ministries for the metallurgical industry, for the engineering industry, and for heavy and agricultural machinery existed at the same time. Even during the past few weeks, there have been suggestions that some of Poland's most urgent problems, environmental protection and geological surveying among others, could best be tackled by creating new ministries.

The new plan proposes replacing ten existing ministries with four larger ones. These four would cover agriculture, food procurement and production, and forestry; mining of coal and lignite and energy production; heavy industry and machine construction; and chemical processing of timber, natural and artificial fibres, and the ceramics, glass, cellulose and paper industries.

General Jaruzelski went on to remind the Sejm of some of the mistakes of past years, when separating the mining industries from power production, and machine building from foundry production caused serious losses in productivity.

The new proposals have not met with unqualified approval. The Sejm Commission for Forestry and the Timber Industry is unhappy at combining forestry with agriculture, but the corresponding commission dealing with agriculture and the food industry seems fairly happy with the union.

Vera Rich

US standards bureau

Wider horizons

Washington

The US National Bureau of Standards, traditionally a preserve of the physical and engineering sciences, is being asked by a congressional committee to broaden its horizons and take on responsibility for the burgeoning field of biotechnology. The recommendation is one of several being put to the bureau as a way of "enhancing the technological and scientific base of the nation's industrial capability".

There has been little reaction yet from the Reagan Administration to the proposals, which have been drafted by the science, research and technology subcommittee of the House Committee on Science and Technology. Secretary of Commerce Malcolm Baldrige told the committee at a hearing in Washington last week that the whole internal organization of his department, which is responsible for National Bureau of Standards, is under review. He talked of an important role for the bureau — in helping to boost US exports by providing data about foreign product standards but said it was too soon to be specific about changes.

The changes being proposed are in line with the findings of recent studies of the bureau, including reports from the General Accounting Office and the Congressional Research Service. In addition to its traditional responsibilities for weights and measures, several committee members, including chairman Doug Walgren, are convinced that the standards bureau could have a central role in federal efforts to stimulate technological innovation in the private sector.

The bureau's principal responsibility has been to help ensure the compatibility of measurement standards needed by industry, consumers, the scientific community and other organizations. In recent years Congress has given the bureau various additional functions, such as administering the Center for Fire Research and the Center for Consumer Product Technology. But often the bureau has been given a new role without adequate funding with the result that other programmes, have been cut back or eliminated.

Last year both the Senate and the House of Representatives held authorization hearings on the bureau's budget to explore possible remedies. Now the House committee is drafting a bill making the bureau's responsibilities more explicit, but also intended to enlarge its contact with the broader research community.

Many of the committee's suggestions are uncontroversial. There is general agreement that adding the biological to the physical sciences would be appropriate, in particular in the development of standards, testing procedures and measurement instrumentation needed for the advancement of biotechnology and genetic