

uranium to putting the fuel elements into the reactor.

Nevertheless, the search for self-sufficiency does not rule out cooperative projects. Indeed, on returning from the World Energy Conference in Munich last September, Admiral Carlos Castro Madero, the president of the Argentinian commission, openly attacked the "negative aspects" of restrictions of nuclear technology transfer, adopted first by the "London Club" of nuclear suppliers and then (at the end of 1979) by a wider circle of industrialized Western states.

Soviet interest has grown in the past year. Last April, during a visit to Buenos Aires, the Soviet foreign trade vice-minister Aleksandr Manzhelo suggested a major nuclear cooperation between the two countries, stating at the same time that he thought that Soviet-Argentinian trade could well double in the next few years. At the end of July, Yuri Fokin, Secretary of the Soviet Foreign Ministry, visited the Atucha-1 plant. **Vera Rich**

Large electron project

Swedish cloud

Sweden is having second thoughts about participating in LEP, the 500-cm 500-GeV electron-positron colliding machine which, at a cost of 900 million Swiss francs, is planned to be the next major project of the European centre for high energy physics research, CERN. At a meeting of the Swedish Natural Sciences Research Council last month, 90 per cent of those present expressed doubts about the arrangements for funding the project.

Delegates from CERN's member states are expected formally to approve the building of LEP at the next meeting of CERN council in June. The plan is to finance the project out of CERN's annual budget by reducing expenditure on other programmes such as the intersecting storage rings and the synchrotron. How quickly LEP can be built will depend on how much of the budget — SwFr610 million this year — can be diverted to it each year. What seems to be worrying Sweden is that the CERN council, which requires a two-thirds majority vote to approve budgets, could demand that Sweden pay more if the cost of LEP rises above initial estimates.

One faction of the Swedish research council says that LEP is simply too expensive to be built now. Another would agree to the project with some concessions — either that Sweden be made exempt from budget increases approved by CERN council, or that the CERN budget be divided into LEP and other programmes, giving Sweden the option of leaving LEP while remaining a full member of CERN's other activities. Under the present arrangement, a decision not to participate in LEP would effectively be a decision to

opt out of CERN altogether. An incidental factor which seems to have added weight to the arguments of LEP's Swedish opponents is the feeling that Swiss industry has reaped unfair benefit from contracts arising out of CERN's work.

Sweden's objections, which have come rather late in the negotiations (most of CERN's members have informally agreed to the LEP proposal), could delay official approval for the project. Although Sweden is not alone in wanting some guarantee that costs will not get out of hand, making it exempt from cost increases approved by CERN council is unlikely to be popular with other members: neither is splitting LEP from the rest of CERN's budget. Many see incorporating LEP into the annual budget as a way of controlling the rate at which money is spent on it.

At present Sweden contributes slightly less than 4.3 per cent of CERN's annual budget. If it decided to leave LEP, the other member states would have to decide how to redistribute the costs amongst themselves or whether to extend the time taken to build the machine. The chairman of the Natural Sciences Research Council, Mr Mats Lemner, expects that the council will shortly discuss the contribution with the Minister of Education. Depending on the outcome of this discussion, parliament may have to make the final decision. If it does, the Swedes would be able to meet CERN's June deadline for a decision on the contribution. **Judy Redfearn**

Artificial hormones

European register?

Brussels

The European Commission is making heavy weather of its plan to ban the use of certain artificial hormones in animal farming. A meeting of agricultural ministers planned for last week was cancelled after the death of Mr F.O. Gundelach, the Danish agricultural commissioner. But the signs were that the meeting would have failed to reach an agreement.

The Commission decided last September that something should be done about hormones after the discovery that diethylstilboestrol was still being used for veal production in Italy. The hormone is banned in the United States and also in many European countries, but is so effective at increasing weight-gain in calves that, where its use is banned, black markets such as that in Belgium spring up.

The agricultural ministers were to have discussed two proposals elaborating on an original proposal made last December. The first calls for a register to keep track of all hormones used as medicinal products, whether for human or animal use, from manufacture and storage to distribution and final use. Veterinarians would be required to control all administration of hormones to animals. The proposed rules say that banned hormones can be used only for "therapeutic treatment" of

pathological cases diagnosed by veterinarians, and not for chronic use in preventive treatments. The second proposal is that there should be a comprehensive sampling system for testing animals and carcasses.

The proposals as drafted involve the "positive listing" of those hormones considered safe for use in meat production. This is opposed by Belgium and the United Kingdom. There is no dispute over banning compounds such as diethylstilboestrol, but it is held that a positive list would inhibit the development of new materials.

A system of "negative listing" would overcome some of these problems, but this would have to be continually revised as alternative hormones came on the market. Given the political need for action, the Commission favours the more cautious positive listing system. Whichever route is followed, the cost to European farmers of making the necessary adjustments will be substantial. **Jasper Becker**

Soviet chemical industry

Effective economy

The Soviet chemical industry is rapidly acquiring prestige status in the Soviet media and ranks, according to a *Pravda* article last week, together with nuclear energy, space research and electronics, as one of the hallmarks of twentieth century progress. The proximate source of this accolade is not hard to identify: almost every article cites, at some point, Mr Brezhnev's dictum that "there can be no effective economy today without a modern large-scale chemical industry".

When Mr Brezhnev made this pronouncement at last October's plenum of the Central Committee of the CPSU, however, he was not so much commending the industry as calling for a programme of "resolute measures" for overcoming major shortfalls in chemical production, ranging from chemical fertilizers and plant protection agents to synthetic fibres, dyes and household detergents. The 33 per cent production increase specified in the guidelines for the new Five Year Plan for the chemical and petrochemical industries (recently placed under separate ministries) is, say the planners, essential if the shortfall is to be eliminated.

The chemical industry does not shoulder full responsibility for the gap. At the end of December, a *Pravda* editorial shifted at least part of the blame to other sectors. Fertilizer plants, said *Pravda*, were held up by insufficient supplies of natural gas and "inaccurate" planning by the light metallurgy sector. Plants with processes requiring high temperatures and pressures often cannot obtain corrosion-proof equipment. In some cases new factories have been built, without the necessary equipment being forthcoming, while, on other occasions, expensive installations have been purchased before it has been