

technical panels on the prospects for different energy sources, it is expected to be in a spirit of optimism that few thought possible six months ago.

One reason is the recent appointment of a new secretary general for the conference, Mr Enrique Iglesias, a Uruguayan who is also executive secretary of the Economic Commission for Latin America. Mr Iglesias, thought to be a candidate for Mr Kurt Waldheim's job as Secretary General of the United Nations, succeeds Mr Mohamed H. Gherab, who has recently been charged with accepting loans from subordinate officials.

A second reason for guarded optimism about the energy conference is that at present the UN secretariat seems to be successfully treading the delicate line between the technical and the political.

It has now been generally accepted that, given a lack of time and resources, the conference can only achieve a limited "state of the art" review of new and renewable energy sources (including solar, geothermal, wind, tidal, biomass, oil shale and hydropower energy). The main focus is therefore likely to be on the institutional mechanisms that can accelerate research and development on these various energy sources — and the obstacles that stand in the way of their implementation.

It is unlikely, however, that any new institution will emerge from the Nairobi conference. Proposals are more likely to be along the lines of a scheme being worked on by the World Bank to form an international network of energy research centres, with a clearly defined set of global priorities distributed in a way that minimizes duplication of research efforts.

Parallel initiatives are also under way inside the United Nations Development Programme (UNDP), which last summer set up a new energy account. UNDP has already received \$3.5 million from the World Bank to carry out a survey of the energy needs of 60 developing countries, as part of the ambitious scheme announced by bank president Robert McNamara last year for a programme of energy loans and investment to total about \$25,000 million by 1985.

The main concern of the UN conference organizers is to devise a set of policy proposals that will be sufficiently specific to meet the recommendations of the technical panels, but sufficiently broad to generate the necessary political support.

One idea under discussion, for example, is a coordinated effort to replant trees that have been cut down for fuel. The World Bank has already proposed raising \$1,000 million towards such a scheme, on the basis that a comparable sum would be found by the individual countries concerned.

Inevitably, there will be points of conflict, some of which have already come to the surface. Little attention, for example, will be given to the environmental efforts of different energy sources, a problem at present of greater concern to

the developed than the developing world. Similarly, the United Nations General Assembly has explicitly stated that the conference will not consider conservation technologies, even though many in the developed countries feel that a reduction in demand is one of the likeliest ways of tackling the energy problem.

There is also dispute about the role of the oil-producing nations. These hold many of the important cards, both in terms of their ability to affect energy prices and in having the cash surpluses available to which access would be needed for any major investment schemes. Their attitude towards the conference remains ambiguous, although Mr McNamara has made it clear that the success of his proposals depends largely on their support.

Given the actual and potential disagreements on each of these topics, therefore, the success of the Nairobi conference still hangs in the balance. But some see light at the end of the tunnel, and argue that although time is getting short, elements such as the World Bank and UNDP initiatives, existing trends in foreign aid budgets and the completion of the technical reports are sufficient to allow a successful outcome.

David Dickson

## Ariane space launcher Still in trouble

The problems of Ariane, Europe's hope for a space launcher, are not over yet. The third test flight, delayed after a failure in a first stage engine on the second test flight last summer, is now unlikely to get off the ground until well after June, the date to which the European Space Agency is still clinging. The difficulty is that no precise explanation of what went wrong with the second flight has yet emerged, and correcting the fault still seems to be a matter of trial and error.

A new schedule for the Ariane programme will not be released until one of two modified fuel injection systems identified as the cause of the fault has been chosen after tests expected to last 4–8 weeks.

The second test flight failed after high amplitude oscillations at 2,300 and 2,700 Hz developed in one of the first stage engines. Tests last October with modified fuel injectors of improved tolerance seemed to solve the problem at 2,300 Hz, but the 2,700 Hz oscillation remained.

Oscillations at these frequencies had not shown up in early tests of the Ariane engines and injectors. But tests up to the middle of last month indicate that the injectors used in early Ariane development differ from new ones, suggesting that they have been modified during assembly, preparation or testing. Nobody has been able to discover precisely how the injectors were modified, but the space agency says it is now trying to increase the margin of error acceptable in the injector design.

The latest line of attack is to test two modified injectors in the hope that one of them will be free from oscillation problems. Officials are hopeful that one system can be chosen within the next couple of months and work can begin on preparing the third test flight. Even if there are no more setbacks, however, a launch in June seems optimistic.

Meanwhile, the French space agency, whose idea it was that Europe should build its own space launcher, is now planning to propose another multi-million dollar venture to the European Space Agency. France wants to be in on the "industrialization" of space in the 1990s and hopes to suggest a remote controlled space laboratory, along the lines of the Russian Salyut space station.

The plan is to build a laboratory for materials processing under micro-gravity that would be placed in geosynchronous orbit by Ariane. The laboratory would be serviced by an expendable vehicle that would deliver supplies and bring processed materials back to earth. A third spacecraft, also in orbit, would be capable of building large structures and experiments for use by the laboratory. The proposal is still only a feasibility study, and will not be put to the space agency before the end of the year. Before then, the French plan to sound out other European nations; preliminary discussions with Germany have already taken place.

Judy Redfearn

## UK research councils

### Getting off lightly

Next year's allocation of the "science vote" of the UK Department of Education and Science is being accepted thankfully by the UK research councils. The thinking may be that if Prime Minister Margaret Thatcher's government can make £200 million cuts in the Conservatives' defence budget, the councils are lucky not to suffer even more.

The Science Research Council, for example, gets £174 million for 1981–82 (at October 1979 prices). Converted to average prices for the current year (say October 1980) this works out at £198 million, compared with current spending for 1980–81 of £204 million — a 3 per cent decrease in real terms. In its annual report for 1979–80, published last November, the council expected "a modest increase" in the next two years; yet a spokesman said this week that the council was "pleased" that the government was treating science and engineering so well.

The Science Research Council's nominal spending on science within the United Kingdom is at present £150.5 million (for 1980–81), and on international subscriptions a nominal £44.5 million. But the latter was calculated at 1979 exchange rates, since when the pound has strengthened sufficiently to reduce the subscriptions bill by some £9 million to