

Costs cloud Korea's synchrotron expansion

Pohang, South Korea. South Korea is racing ahead with plans to expand the numbers of beamlines and users for its first synchrotron, based at Pohang University of Science and Technology (Postech). But it remains unclear where all the users will come from and how the operational costs will be shared between the government, Postech and the Pohang Iron and Steel Company (Posco), which backs the project.

The Pohang Accelerator Laboratory (PAL) began routine experiments on its 2-GeV synchrotron, the Pohang Light Source, last year, using two beamlines. The successful completion of the synchrotron in 1994 was a considerable feat as, although it is Korea's first, it is an advanced third-generation machine. The number of users has reached several hundred, according to Won Namkung, director of PAL.

The synchrotron has six beamlines, including one for advanced lithography run by the LG Semicon company. PAL intends to add three new beamlines every year for the next decade with a final target of 40 beamlines and 1,500 to 2,000 users by 2008, says Namkung. The government has set aside a budget for three new beamlines in 1997 — each costing on average about US\$2 million. But it has yet to be resolved how some of the operational costs will be covered.

A large proportion of the initial costs of both Postech and PAL were paid by Posco, the world's second-largest steel-maker (after Nippon Steel of Japan), as part of the

company's effort to feed back some of its huge profits to the local community. Almost two-thirds of the \$200-million cost of the light source was paid by the company.

But Posco is beginning to distance itself from the university and PAL. It has paid its last instalment of \$150 million to the Postech foundation, which will manage an



Common interests? The steel company that co-funds the synchrotron at Postech (above) is distancing itself.

endowment fund for the university with an annual return of \$50 million. And the company has also withdrawn many of its researchers from the Research Institute of Science and Technology, which shares the Postech campus, and has put them back in its corporate laboratories.

The marriage of company and university research does not seem to have been a particularly happy one. The company was looking for short-term practical returns, whereas faculty members are more interested in long-term basic research.

Despite Posco's moves to withdraw from direct involvement in Postech, the steel company last week decided to establish a new

\$25-million fund to help the university with the high running costs of the synchrotron. Costs amount to more than \$20 million a year if the construction costs of the new beamlines are included.

The government is taking on a larger share of the costs of PAL and it is being operated as a national facility affiliated to Postech for use by scientists throughout Korea. It is also being used by a few overseas scientists. But exactly how operational costs will be shared is still "under negotiation", and it will take time to reach a final decision, says Namkung.

One problem is that Postech is a private university, and it is unprecedented for taxpayers to cover the operating costs, particularly salaries, of a private institution. The university argues that the salaries should be considered part of the operating costs of the national facility, and should be covered by the government. But the government is prepared only to pay half the \$6-million annual bill for the 150 staff at PAL, the university paying the rest. Namkung says PAL refused to agree that a users' fee be introduced to cover some of the costs.

Another challenge facing the laboratory is the recruitment of users. A Korean Synchrotron Users' Association has been set up and now supports more than 200 members, but many more users will be required to justify the laboratory's expansion.

Postech has made some attempts to recruit overseas users. An Australian synchrotron users' group that already has a beamline at Japan's Photon Factory has been courted. But at the end of last year the Australian government decided to put more money into the Photon Factory and a new collaboration with the Advanced Photon Source at Argonne National Laboratory in the United States. The Argonne machine is more powerful than Korea's (see *Nature* **378**, 653; 1995).

There is a handful of users from Japan and Taiwan. But the vast majority are Korean. At a meeting in Seoul earlier this month, science ministers of the Asia-Pacific Economic Cooperation (APEC) forum called for greater sharing of national research facilities in the region. Facilities at Postech were put forward by the Korean government for use by APEC scientists under the forum's planned Advanced Science and Technology Network (see *Nature* **384**, 200; 1996).

But Namkung says that foreign scientists "should not dominate the users' time" and PAL may "impose a cap or designate specific beamlines for international use. Others go further, and suggest — informally — that Korea should not be expected to support the research of scientists from developed countries. **David Swinbanks**

India approves genetic diversity study

New Delhi. The Indian government has approved a five-year, US\$20-million project to study the genetic variations of India's diverse population groups. The decision comes after much debate on ethics and research priorities.

The programme, described as the national version of the global Human Genome Diversity Project, will be run by the Department of Biotechnology. "We are giving this high priority," says Manju Sharma, secretary of the department.

One goal of the genome project is to understand how Indian communities differ genetically from one another and from peoples in other parts of the world. Another is to understand the relationship between genomic variation and disease patterns in the groups studied. India has 465 communities, including 75 endangered tribal groups.

According to the biotechnology department, the project may give priority to vanishing tribes in the Andaman islands, groups in Kerala state with distinctive

features, and India's 300,000 Parsees, who experience a high incidence of breast cancer. Four laboratories are being dedicated to this project and a national repository of biological samples, such as DNA and cell lines, is going to be enlarged, says Sharma.

The department's guidelines for the project specify that blood can be drawn only from volunteers, and communities must share any benefits that accrue from the investigations. Funds will be available on condition that research is done by Indian scientists in Indian laboratories, and that no samples are sent out of the country.

Government officials admit that blood samples and DNA have in the past been sent abroad without the knowledge of Indian agencies (see *Nature* **379**, 381; 1996). Sharma says that he hopes that this practice will now stop as "we are going to fund this research and create the facilities required for genomic analysis in India itself". **K. S. Jayaraman**