

NEWS

Accelerator plans stalled after US and UK cuts

The machine on which the world's particle physicists have staked the future of their discipline hangs in the balance owing to budget cuts.

On 18 December, the US Congress passed a spending bill slashing funding for the International Linear Collider (ILC), a 31-kilometre machine to collide electrons with positrons, by three-quarters to just \$15 million in 2008, money that has already been spent. The United States pays for around a third of the collider's roughly \$100-million–120-million annual global research and development effort. And a week earlier, the United Kingdom announced that it was withdrawing from the project, describing plans for it as “not credible”. The decision will help make up an £80-million (\$160-million) shortfall at the funding body responsible for UK high-energy physics.

The situation is “dire”, says Barry Barish at the California Institute of Technology in Pasadena, who heads the global design effort. The linear collider's design was scheduled to be finished in 2010 but will now be delayed until at least 2012. “We have to defer, delay and stretch out,” he says.

Burton Richter, a Nobel laureate and former

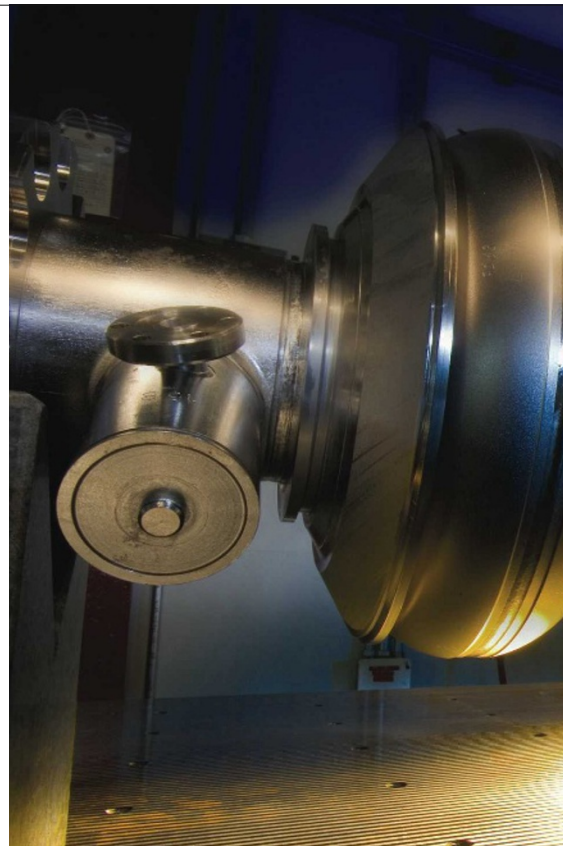
director of the Stanford Linear Accelerator in California, says the project is fragmented politically, with international collaboration at a low: “This now makes things look pretty grim for a real international machine.”

The linear collider is the planned successor to the Large Hadron Collider (LHC), a proton accelerator scheduled to begin operation at CERN, the European particle-physics laboratory near Geneva, in the next few months. By smashing beams of electrons and positrons at energies of up to 500 GeV, the linear collider will provide a cleaner signal than its LHC counterpart. Barish's team says it will cost around \$7 billion.

Given that the LHC has not begun work, it might seem surprising that physicists are planning a next-generation machine. But years of design, environmental assessments and lobbying are required to build such a large and expensive device, says Brian Foster, a physicist at the University of Oxford, UK, who is the project's European director. “These things don't just pop out of the air,” he says. “A very large amount of preparatory work is required.”

The collider's proponents are organized into three regions — Asia, Europe and the

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United States. America's main contribution has come from physicists at Fermilab, the high-energy physics laboratory in Batavia, Illinois. But following deep budget cuts, the 170 employees working on the linear collider have been diverted to other projects, says Stephen Holmes, Fermilab's associate director for

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India aims for 'quantum jump' in science

BANGALORE

India's prime minister Manmohan Singh has announced unprecedented funding for science education and research, saying it is a top priority for his government. He has announced a range of schemes to attract students and replenish government agencies' shrinking pool of scientific personnel.

“We are planning to fund 30 new Central Universities, five new Indian Institutes of Science Education and Research, eight new Indian Institutes of Technology, and 20 new Indian Institutes of Information Technology,” Singh said. In the next five years, he added, India will also



India plans to pay science students.

be launching 1,600 polytechnics, 10,000 vocational schools and 50,000 skill-development centres. One million schoolchildren will receive science innovation scholarships of 5,000 rupees (US\$130) each over the next five

years, and 10,000 scholarships of 100,000 rupees per year will go to those enrolling on science degree courses.

Discipline-specific education programmes will be launched in strategic sectors such as nuclear and space sciences “to capture talent at the school leaving stage itself”.

Singh unveiled the schemes while opening the week-long 95th Indian science congress, the largest annual meeting of Indian scientists, at Visakhapatnam on 3 January. “We need a quantum jump in science education and research,” Singh said. “This agenda can no longer wait. The time has come for action, and

I assure you of my highest personal commitment.” Singh said a plan for implementing the proposals will be devised in the next six months. Funding the schemes has required a fivefold increase in the education budget for 2007–12.

The science community has largely welcomed the initiatives, although some express caution. “The money must be spent in a short period of time,” says Dipankar Chatterji, a molecular biophysicist at the Indian Institute of Science in Bangalore. “This poses a tremendous challenge to the heads of these institutions.”

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