

Threat to UK participation in International Linear Collider

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The UK's Linear Collider Collaboration LCUK has reacted with shock and disbelief to the announcement by the STFC of their intention to withdraw from the International Linear Collider (ILC) due to funding problems. The UK has been a pioneer member of the ILC since 1991, gaining momentum after it was placed on the PPARC roadmap in 1998. During these 16 years, R&D world-wide has transformed the ILC from a distant dream to what is internationally accepted as the next accelerator for frontier research in particle physics, complementary to the LHC now being commissioned at CERN.

In the last two years, the ILC has successfully completed two of the three phases leading to submission of the project to world governments for approval and decision on the host site. The final, engineering design phase, began this summer and is scheduled to be completed in 2010. The ILC promises to radically change our understanding of the universe by revealing the origin of mass, uncurling hidden dimensions of space, and explaining the mysteries of dark matter in the universe. Its construction may be made particularly urgent by early LHC results, which are likely to raise questions that only the ILC can answer.

Over the past decade the UK has invested more than £30M in ILC. This has allowed the LCUK team of over 100 scientists at 16 universities and research institutes to perform world-leading R&D and position the UK for a major role in the global project. Roughly £14M is needed to fulfill the UK's responsibilities during the engineering design phase.

For the UK to withdraw from the ILC at this crucial stage would be like refusing to refuel the lead racing car at the last pit stop before the finish line due to concerns about the cost of petrol.

The UK, through its central role in the ILC accelerator and detector R&D, has attracted world-leading scientists to work here, who benefit a wide range of other fields such as synchrotron radiation sources, and semiconductor detector development in collaboration with UK industry. A UK physicist, Brian Foster of Oxford University, is European Director of the ILC. It is scientific vandalism to throw all this away in order to make a small dent in a much larger STFC financial shortfall substantially brought about by the merger of the former CCLRC and PPARC and totally unrelated to particle physics research or the merits of the UK's work in the ILC.

We are particularly unhappy that this strategy has been devised in secrecy with minimal consultation with the broader scientific community. We call upon the Government to provide sufficient resource to allow STFC to carry out its core programme of current research and future world-leading machines, which by any definition will include the ILC. Termination of STFC involvement in ILC would alienate the international community which entrusted vital parts of the project to UK scientists, severely damaging our credibility in all future international scientific projects. Since science is becoming ever more global, the consequences for the UK will be serious.

We urge the STFC to think again, and to participate in an open discussion with the scientific community to find less damaging alternatives, while continuing to press the

Government to rescue British science from a crisis which runs counter to the Government's deepest convictions to support international excellence in UK research and to emphasise the importance of physics to the UK and its economy.

Ends

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Notes for editors:

For a description of ILC see: <http://www.linearcollider.org/gateway/>

Synergies: Advanced SR facilities using SASE principle, silicon sensors and readout microelectronics for medical imaging, SCRF for multiple applications.

Quotes:

"The International Linear Collider is a truly global endeavour and relies on contributions from experts around the world, and scientists from the UK play central roles in many crucial areas of the planned machine. In a time of crisis it is natural to cut costs where they are immediately evident. However, a long-term strategy calls for long-term investments. Designing a machine to answer nature's most fundamental questions takes time and effort, and losing leading scientists from the UK would be a major set back." – Prof. Rolf-Dieter Heuer, Research Director, DESY, Hamburg, Germany

"I fervently hope that this rush to judgment on the ILC will be reconsidered. The world has come together to prepare for the remarkable discovery opportunities that this truly international facility will offer. It is astounding to me that the UK would choose not to participate." – Prof. Piermaria Oddone, Director, Fermi National Accelerator Laboratory, Chicago, USA

"The progress of fundamental science and technology in several areas is now dependent on international and even interregional collaborations. In these efforts the UK has been a leader in generating the ideas and bringing the enabling scientific organizations into existence. This is particularly so with regard to the International Linear Collider. Canceling the UK effort unilaterally is a devastating blow to internationalism and to the progress of science that so much depends upon it." - Prof. Maury Tigner, Director, Laboratory for Elementary-Particle Physics, Cornell University, USA

"I am deeply saddened by the statement in the STFC Delivery plan concerning the withdrawal of UK funding from the ILC. This represents an extraordinary waste of the investment and leadership established by the UK in this truly international project. As Chair of the International Committee for Future Accelerators (ICFA) I call on the UK to reconsider this unilateral decision and reaffirm that in the

opinion of the global particle physics community, the ILC remains the highest priority for future particle physics facilities in the world." –Prof. Albrecht Wagner, Chair man of the Directorate, DESY, Hamburg, Germany

"It is extraordinarily shortsighted to cut the UK's leading role in preparations for the International Linear Collider. By doing so the new Research Council has put in jeopardy our participation in the next generation investigations into the fundamental nature of matter. This work needs a long term view and a steadfast approach. Along the way many students will be inspired, new technologies emerge, and many excellent physicists will be trained.' Prof. Roger Davies, Wetton Professor of Astrophysics and Chairman of Physics, Oxford University

"The current financial crisis is obviously severe, but a total abandonment of the UK's investment in the ILC programme is an extremely drastic response. If the LHC finds supersymmetry we will be scrambling to rebuild these ILC groups in a few years, which is almost impossible once the people have left. We will have also given up our leadership, which we won't get back. It would seem sensible to maintain some level of involvement until we know if a crash programme to build the ILC is supported by the physics." Professor David Wark, Professor of Physics, Imperial College London