

**RECOMMENDATIONS OF THE GERMAN
KOMITEE FÜR ELEMENTARTEILCHENPHYSIK (KET)
CONCERNING THE CERN/LHC FINANCIAL CRISIS**

Meeting of 12 November 2001 in Mainz.

KET members present: Jürgen Drees, Günter Flügge, Claus Gössling, Reinhold Rückl, Ron Settles, Norbert Wermes, Günter Wolf. The members, Ralph Eichler, Franz Eisele, Hans-Falk Hoffmann and Thomas Lohse, gave their input via phone/e-mail.

Present as guests: the members of the CERN SPC, Wilfried Buchmüller, Robert Klanner, Johanna Stachel.

The purpose of the meeting was the discussion of the cost overrun for LHC. The following is a summary of the conclusions.

The financial figures for CERN are available in various forms on the web; the additional LHC cost (at 2001 prices) including prototyping work are 618 MCHF (Finance Committee 6-7 November 2001: Main Points of Discussion Concerning the LHC Project, <http://user.web.cern.ch/info/LHCCost/>).

RECOMMENDATIONS

- **The CERN organisational and financial structure must become more transparent and efficient, and the dissemination of information within the laboratory must be improved.**
- **CERN should make every effort to finish payments for LHC in 2009.**
- **CERN should make every effort to start up LHC and the experiments in 2006 as foreseen** with commissioning (pilot run) and beginning of data taking.

A return to the original missing magnet scheme is not recommended. However, an initial reduction of the beam energies, e.g., from 7 to 5 TeV and starting with detectors which are not yet 100% completed, is acceptable if in this way an earlier start-up can be achieved.

To recreate the financial and scientific foundation to enable these goals to be met, the following actions are recommended:

- **Savings.**

- **All CERN divisions should give LHC the highest priority.** That is, money/manpower resources should be refocussed to strengthen the LHC effort. For example all material orders for the LHC machine must have priority, and as much manpower as possible should be shifted to the construction of the LHC.

- **Further possibilities** to be investigated include:
additional in-kind contributions to the LHC machine,

mobilisation of East European and Asian resources such as engineers, technicians etc. (e.g. from the institutes collaborating on LHC experiments) for the construction of the LHC machine,

reduction of outsourcing where not economical,

adjustments to the CERN salary structure, in particular reduction or cancellation of expendable benefits.

- **R&D activities towards future technologies should be much reduced in manpower and other resources.** These comprise CLIC, the neutrino factory and a possible muon collider.

- **The breadth of the HEP programme should be maintained.** This includes

- retaining all four LHC experiments,
- running the approved HEP experiments including NA48, COMPASS, heavy ions, Dirac, AD, NTOF and CAST,
- the ISOLDE programme.

Cost-savings can nonetheless be achieved:

- by reduction of the total running time, e.g., by one third and, where appropriate, by reduction of the maximum SPS beam energy, e.g., from 400 to 200 GeV.

- **Other options to generate savings.**

- Redefine the start of the LHC computing-Phase II.