

Linear Collider @ CERN Workshop Statement January 7-9 2026

In December 2025, the European Strategy Group (ESG) published recommendations expressing a strong preference for FCC-ee as the next flagship project. The ESG recognized that linear colliders are technologically mature and offer programmes in Higgs and top-quark physics that are competitive to FCC-ee when operated at two energy stages and up to 550 GeV centre-of-mass energy.

- As alternative to the FCC-ee, the linear collider projects have thus been identified as the only mature and technically feasible projects offering a flagship-level physics programme.

As participants of the LinearCollider@CERN Workshop, we re-emphasize that the full exploration of the Higgs and top sectors first at the HL-LHC, and then at an e+e- collider with its qualitatively and quantitatively complementary capabilities, is decisive for shedding light on the mysteries of electroweak symmetry breaking and the early universe. Polarised e+e- collisions at centre-of-mass energies of at least 550 GeV enable measurements of processes with two and more Higgs bosons in the final state, offering access to the trilinear Higgs self-coupling via lowest-order contributions. Together with precision measurements of top quark production and of processes with multiple gauge bosons, they offer discovery potential complementary to that of hadron colliders. A linear collider also has the potential to react to discoveries at HL-LHC or elsewhere. Beyond upgrades of the facility itself, the future options include the later construction of a new proton-proton collider, a muon collider or a collider based on plasma technology to probe the 10-TeV scale.

- A linear collider facility offers a “Higgs Factory” program at significantly lower initial cost, starting from around 7 BCHF, and with an environmental footprint comparable to or smaller than LEP/LHC. It also offers an attractive and flexible upgrade path that reduces financial risks and retains opportunities. Thus, a linear collider facility is a flagship-level alternative, retaining European leadership in accelerator-based particle physics, should the FCC-ee project not be feasible.

The LC community has presented two mature technology options for a first-stage linear collider: superconducting RF niobium cavities (SCRF), driven by klystrons; and normal conducting copper cavities developed for CLIC, powered by a drive-beam or klystrons. Their proponents have been working closely together for more than a decade. The community gathered at this workshop is determined to advance a linear collider facility based on these technologies.

- The linear collider community with all its expertise remains committed to pursuing the possibility of a linear collider project at CERN, with SCRF or CLIC technology, while retaining later upgradability and embracing novel accelerator concepts. The community is ready to collaborate with the future circular collider projects regarding common accelerator, detector and physics challenges.

Over the coming three years, until a definitive decision on the approval of CERN’s next flagship collider project has been taken, the remaining technical and cost risks for implementing a linear collider facility at CERN should be studied. The compatibility with upgrades to higher energies or much higher luminosities, embracing novel accelerator concepts, as well as with the option of photon-photon collisions and beyond-collider opportunities, are considered essential parts of the study.

- We encourage CERN to conduct a study for the implementation of a linear collider facility hosted at CERN, in close collaboration with the ongoing global community effort in technology R&D (e.g. the ILC Technology Network). A possible workplan has been presented, discussed and further detailed during this workshop.