

## **ECFA guidelines for collecting the input of the European high-energy physics community for the 2026 update of the European Strategy for Particle Physics**

The remit of the European Strategy Group (ESG) specifies that it should take into consideration various aspects of the high-energy physics (HEP) landscape, including, very importantly, “the input of the particle physics community”. A major component of this overall community input will be the “national inputs”, collected individually by the national community in each country (or in some cases countries grouped into regions). To be of greatest use in informing the European Strategy for Particle Physics (ESPP), the information collected must be as coherent and as uniform as possible, especially when addressing the key issues. To assist with this, the European Committee for Future Accelerators (ECFA) has drawn up a set of guidelines for the collection of national inputs. They are intended as *suggestions* aimed at streamlining the process across the different countries/regions, on the clear understanding that each country/region is at liberty to define its own process, schedule and questions to consider in order to form its own national view(s) as input(s) for the Strategy.

National inputs to the ESPP update can be sent at different points in time: prior to the deadline of 31 March 2025 for the submission of input to the ESPP; after the March 2025 deadline and by 26 May at the latest, so it can be analysed by the ESG in time for the Open Symposium; after the Briefing Book has been released, in time for the Strategy Drafting Session from 1-5 December 2025. The final deadline for input to be considered by the ESG at its Drafting Session is 14 November 2025.

### **1) Organization of national and/or regional meetings**

- a) It is suggested that two national (“town-hall” or similar) meetings be organised (clearly, each country/region remains at liberty to decide on the number):
  - i) one meeting between the end of March 2025 and the Open Symposium at the end of June, *with a deadline for comments by 26 May*, and
  - ii) a second one after the release of the Briefing Book around the end of September 2025, *with a deadline of 14 November 2025*.
- b) The meeting(s) could/should be co-organised by the Restricted ECFA delegate and the country’s representative on the ESG (for some countries this is the same person).
- c) The meeting(s) should be guided by a set of “standard questions” to be considered.
- d) Potentially, and if deemed useful, the November 2024 Plenary ECFA meeting could be used to further guide and assist with this process.

### **2) The ESG's remit explicitly states that “The Strategy update should include the preferred option for the next collider at CERN and prioritised alternative options to be pursued if the chosen preferred plan turns out not to be feasible or competitive”.**

It is imperative that the European HEP community should provide explicit feedback on both the preferred and alternative options for this “next collider at CERN”, which will be the Laboratory's next flagship project, and an explanation of any specific prioritisation.

### **3) Questions to be considered by countries/regions when forming and submitting their “national input” to the ESPP:**

- a) Which is the preferred next major/flagship collider project for CERN?
- b) What are the most important elements in the response to 3a)?

- i) Physics potential
  - ii) Long-term perspective
  - iii) Financial and human resources: requirements and effect on other projects
  - iv) Timing
  - v) Careers and training
  - vi) Sustainability
- c) Should CERN/Europe proceed with the preferred option set out in 3a) or should alternative options be considered:
- i) if Japan proceeds with the ILC in a timely way?
  - ii) if China proceeds with the CEPC on the announced timescale?
  - iii) if the US proceeds with a muon collider?
  - iv) if there are major new (unexpected) results from the HL-LHC or other HEP experiments?
- d) Beyond the preferred option in 3a), what other accelerator R&D topics (e.g. high-field magnets, RF technology, alternative accelerators/colliders) should be pursued in parallel?
- e) What is the prioritised list of alternative options if the preferred option set out in 3a) is not feasible (due to cost, timing, international developments, or for other reasons)?
- f) What are the most important elements in the response to 3e)? (The set of considerations in 3b) should be used).

**4) The remit given to the ESG also specifies that “The Strategy update should also indicate areas of priority for exploration complementary to colliders and for other experiments to be considered at CERN and at other laboratories in Europe, as well as for participation in projects outside Europe.” It would thus be most useful if the national inputs explicitly included the preferred prioritisation for non-collider projects. Specific questions to address:**

- a) What other areas of physics should be pursued, and with what relative priority?
- b) What are the most important elements in the response to 4a)? (The set of considerations in 3b) should be used).
- c) To what extent should CERN participate in nuclear physics, astroparticle physics or other areas of science, while keeping in mind and adhering to the CERN Convention? Please use the current level and form of activity as the baseline for comparisons.