

INFN Input per la *European Strategy*

2nd meeting del Gruppo di Lavoro

22 Luglio 2024

Informazioni e line guida da ESPP Secretariat (e ECFA)

- Meeting Plenario ECFA (pECFA) tenutosi il 4 e 5 Luglio a LNF
 - [Agenda](#)
- Timeline della prossima European Strategy (vedi slide dedicata)
- *Submission of input from the community by 31 March 2025*
 - *Input from projects (FCC, CLIC, ..., Muon Collider, ..., theory, ...) expected*
 - *Input from national communities expected*
- *Key Input* sarà disponibile solo in coincidenza con questa data; pertanto *we see a need for further community input (at the basis of national input) at later stage*
 - *Final report on FCC feasibility study (including progress on financial feasibility)*
 - *Important input from alternative projects*

da Karl Jakobs

(ii) Open Symposium 23 – 27 June 2025

In addition to plenary (and parallel) presentations, this Symposium should be organised such that there is room for discussions

(iii) Based on the collected input (March 2025) and Briefing Book (Sept. 2025) **further input from the national communities is welcome**

A proposal on how to collect and structure this input is presented by ECFA

→ see talk by Paris Sphicas this afternoon

Summary on Community Input

31 March 2025

Deadline for the submission of input from the community

Further input from national communities

23 – 27 June 2025

Open Symposium

End of September 2025

Submission of the “Briefing Book”

Further input from national communities, deadline 14 Nov 2025

01 – 05 December 2025

Strategy Drafting Session

Considerazioni importanti, baseline e possibili scenari alternativi

da Karl Jakobs

- *In this Strategy Update process, we must converge on a preferred option for the next collider at CERN plus alternative options (prioritised)*
- *This may imply as well strong focus on certain R&D lines*
- *It will provide the basis for a decision on construction of the next major collider at CERN by Council in 2027/28*
- *Current baseline – justified by 2020 Strategy: FCC integrated programme (FCC-ee followed by a hadron collider of at least 100 TeV)*
- *Possible alternative scenarios (for next collider, following the HL-LHC):*
 - *Realisation of a lower-energy hadron collider (50 – 80 TeV) on an earlier timescale (2050 – 2055)*
 - *Linear Collider at CERN (CLIC, ...)*
 - *Muon Collider at CERN*
 - *Further exploitation of the LHC physics programme, eventually with the addition of e-h collisions*
 - ...
- *Non-exhaustive list, other scenarios may come up and be proposed by the community*

Towards more uniform/coherent national inputs to ESPP

3. Questions to be considered by individual countries/regions in forming and furnishing a “national input” to the ESPP:




P. Sphicas

- a) Which is the preferred next major/flagship collider project for CERN?

- b) What are the most important elements in the response to (3a)?
 - **Physics potential**
 - **Long-term perspective**
 - **Financial and human resource requirements – and implications for other projects**
 - **Timing**
 - **Careers and training**
 - **Sustainability**

Towards more uniform/coherent national inputs to ESPP

P. Sphicas

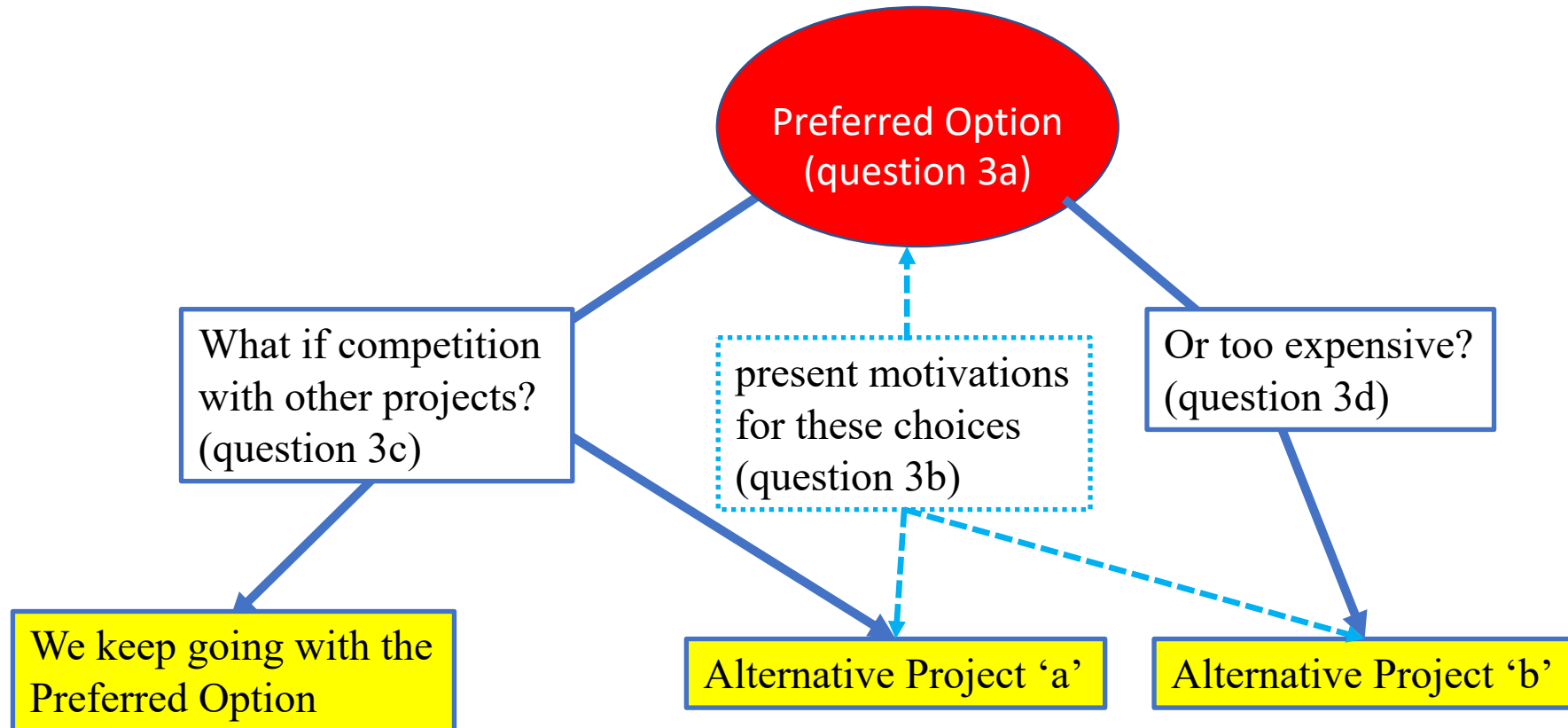
- c) How does the answer to (3a) get affected, i.e. should CERN/Europe proceed with the preferred option or should alternative options be considered:
 - i. If Japan proceeds with the ILC in a timely way?
 - ii. If China proceeds with the CEPC on the announced timescale?
 - iii. If the US proceeds with a Muon Collider?
 - iv. If there are major new (unexpected) results from the HL-LHC or other HEP experiment?
 - v. Beyond the preferred option, what topics for concurrent R&D on accelerators (e.g., High-Field Magnets, RF technology, alternate accelerators/colliders...) should be prioritised?
-  d) What is the prioritized list of alternative options if the preferred one is not feasible (due to cost, timing, international developments, or other reasons)?
-  e) What are the most important elements in the response to (3d)?
-  f) To what extent should CERN participate in Nuclear, Astroparticle 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.

[AN: CERN Convention](#)

La “logica” di quello che ci chiedono

Karl's reminder:

Current baseline – justified by 2020 Strategy: FCC integrated programme (FCC-ee followed by a hadron collider of at least 100 TeV)

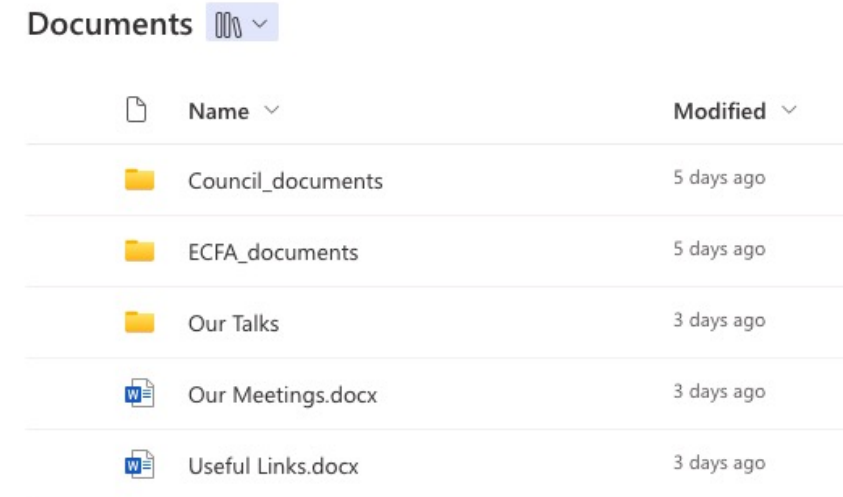


Come procediamo noi?

- Il risultato del [workshop INFN](#) del 6 e 7 Maggio è consistente con quanto presentato e discusso da Segretariato ESPP e ECFA al meeting di LNF.
 - **Dobbiamo fare del lavoro ulteriore per elaborare le opzioni sui progetti alternativi**
- La preparazione dei documenti che si pensa di utilizzare come Input alla prossima ESPP è in linea con quanto richiesto o suggerito
- Ulteriori affinamenti del documento di *Input* principale terranno conto delle discussioni che stanno avendo luogo o che presto avranno luogo presso i Laboratori Nazionali, le Sezioni e le Commissioni Scientifiche (e della sintesi che arriverà da questo GdL)
- Sottometteremo entro il 31 Marzo 2025 i nostri documenti di Input. Il documento principale lo vorremmo sottomettere insieme a tutti gli altri. Il Management INFN valuterà se sarà necessario un aggiornamento da parte nostra, da sottomettere dopo il Briefing Book e prima della Drafting Session.

“Logistica” e documenti utili al nostro lavoro

- Abbiamo un categoria **Indico** (INFN) per i nostri incontri: <https://agenda.infn.it/category/2108/>
- Abbiamo anche un’ **area sharepoint** disponibile a questo [link](#), nella categoria “Documenti” potete trovare documentazione (nostra o di altri colleghi/gruppi) più link a workshops o incontri utili al nostro lavoro .
- **Prossime riunioni – proposta:**
 - **Prima settimana di Ottobre** (1-4; CSN dal 9 al 27 Settembre)
 - **Prima settimana di Dicembre** (2-6)
 - **Workshop operativo prima metà di Febbraio 2025**
 - Appuntamenti successivi, fino a Novembre 2025, da definire più avanti



The screenshot shows a SharePoint 'Documents' library. At the top, there is a header 'Documents' with a search icon and a dropdown arrow. Below this is a table with two columns: 'Name' and 'Modified'. The table contains the following entries:

Name	Modified
Council_documents	5 days ago
ECFA_documents	5 days ago
Our Talks	3 days ago
Our Meetings.docx	3 days ago
Useful Links.docx	3 days ago

Iniziative INFN programmate

- **23 luglio 2024:** incontro ZOOM per preparazione documento su studi di **macchine acceleratrici** svolti dall'INFN e che sono stati finanziati dalla Giunta Esecutiva con fondi dedicati per contribuire allo sviluppo delle raccomandazioni European Strategy 2020
 - + altri eventuali contributi che emergessero dalla comunità di acceleratori dell'INFN e che fossero giudicati meritevoli di attenzione in questo contesto.
- **1 Ottobre 2024:** (primo) **Incontro della comunità dei fisici teorici (e sperimentali)** <https://agenda.infn.it/event/42594/timetable/>

eventi interessanti

- [The 2024 International Workshop on Future Linear Colliders \(LCWS2024\)](#)
- Possibile feedback da [ICHEP](#) 17-24 July (stasera Panel: Future of Particle Physics)?
- [Prossimo Plenary ECFA](#) 14-15 Nov (al CERN)
- [Meetings ICFA](#)

Materiale supplementare

Timeline

September 2024 Council

Council appointment of the members of the PPG

December 2024 Council

Council decision on the **venues for the Open Symposium** and the **Strategy Drafting Session**

Call for proposals to host these events have gone out;
Dates of both events have been fixed

31 March 2025

Deadline for the submission of input from the community

23 – 27 June 2025

Open Symposium

End of September 2025

Submission of the “Briefing Book” to the ESG

01 – 05 December 2025

Strategy Drafting Session

End January 2026

Submission of the Draft Strategy Document to the Council for feedback

March-June 2026 Council Sessions

Discussion of the Draft Strategy Document by the Council followed by the updating of the Strategy by the Council.



Towards more uniform/coherent national inputs to ESPP

P. Sphicas

1. Organization of national and/or regional meetings

- One or two meetings are suggested (clearly, each country/region may decide to hold fewer/more meetings). These meetings would be most informed if they would occur after the corresponding information is released:
 - One meeting after March 31st, when all inputs to the ESPP are submitted.
 - One meeting after the release of the Briefing Book, at the end of September, and before the Drafting Session (first week of December).
- The meeting(s) could/should be co-organized by the RECFA delegate and the country's representative on the ESG. (It is noted that for some countries this is the same person).
- These meetings should be guided by a set of “standard questions” that should be considered by the communities.

- Potentially, and if deemed useful, the November 2024 Plenary ECFA meeting could be used to further guide and assist with this process.
 - Here, input from (P)ECFA is welcome/needed!

Future Accelerator options for CERN

 ESPP 2020 recommendation

 Alternative options

e+e- collider

hadron collider

electron-hadron collider

$\mu+\mu-$ collider

