

Slides di supporto ai coordinatori CSN1
per organizzare riunioni locali sulla
European Strategy

Roberto

Grazie a Aleandro Nisati per aver preparato gran parte delle slides !

European Strategy for Particle Physics

- The **European Strategy for Particle Physics** is a comprehensive framework coordinated by CERN Council to set the priorities and future directions for particle physics research in Europe. It aims at guiding scientific, technological, and financial decisions in particle physics, in Europe, but not only: it impacts on a global scale due to the international collaboration and to the impact of CERN/Europe on the fundamental research worldwide.
- This process, typically carried out every 7-8 years, is based on an extensive consultations with the scientific community, stakeholders, and relevant institutions to ensure that the strategy reflects the latest scientific and technological advancements and addresses emerging challenges.



Welcome

The European Strategy for Particle Physics is the cornerstone of Europe's strategy-setting process for the long-term future of the field. Mandated by the CERN Council, the Strategy takes into account results from the LHC and other facilities in the world, the international physics landscape and developments in related fields with the aim to maximise scientific returns.

In March 2024, the CERN Council launched the process for the third update of the Strategy. [The European Strategy Group](#) (ESG) and the [Strategy Secretariat](#) for this update were established in June 2024 to organise the full process. The [remit](#) of the European Strategy Group was also approved in June 2024.

The Strategy update process is expected to converge by January 2026, when a draft Strategy document will be submitted to the Council. The community at large will be involved during the full [process](#) and is asked to provide input at several stages.

RELATED WEBSITES

- ▶ [The European Strategy for Particle Physics](#)
- ▶ [CERN Council](#)
- ▶ [European Committee for Future Accelerators \(ECFA\)](#)
- ▶ [European Strategy Forum on Research Infrastructures \(ESFRI\)](#)

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La home page della prossima Strategy si trova a questo link:

<https://europeanstrategyupdate.web.cern.ch/welcome>

Timeline for the update of the European Strategy for Particle Physics



European Strategy for Particle Physics

Steps in the Update Process

ESPP⁵
Update
2024-2026

1. Mandate by the CERN Council:

- The update process begins when the CERN Council issues a **mandate to review and update the current strategy**. This mandate outlines the scope, goals, and timeline for the update. ✓

2. Community Involvement and Call for Input:

- A **public call for input is issued**, inviting contributions from the global particle physics community, including researchers, institutions, and national funding agencies. This step ensures that a wide range of perspectives and ideas are considered. ✓

3. Establishment of the Physics Preparatory Group (PPG):

- A **Physics Preparatory Group (PPG)** is formed, consisting of experts from the field. This group is responsible for collecting input, organizing discussions, and preparing a draft of the updated strategy. The PPG typically includes representatives from CERN, member states, and prominent physicists. ✓

4. Open Symposium:

- An **Open Symposium is held**, gathering scientists and stakeholders to discuss the input received and the key scientific questions that the updated strategy should address. This symposium serves as a platform for debate on the future direction of the field, including potential projects, experiments, and technologies. ✓

Venezia

5. Drafting the Strategy Update:

1. Based on the discussions and input, the **PPG drafts the updated strategy**. This draft, **the Briefing Book**, outlines the recommended scientific priorities, technological developments, and necessary investments for the coming years.

7. Submit the European Strategy Update recommendations to the CERN Council :

- The **Briefing Book is reviewed by the European Strategy Group (ESG)**, which includes representatives from CERN, member states, and observer states. Additional feedback is sought to refine and adjust the recommendations. A final document based is issued by the ESG to the CERN Council

Physics Preparatory Group (PPG)

Members:

- Strategy Secretary (acting as Chair),
- four members appointed by the Council on the recommendation of the SPC,
- four members appointed by the Council on the recommendation of ECFA,
- SPC Chair,
- ECFA Chair,
- Chair of the European Laboratory Directors Group ,
- one representative appointed by CERN,
- two representatives from Asia appointed by the respective regional representatives in ICFA,
- two representatives from the Americas appointed by the respective regional representatives in ICFA.

<https://europeanstrategyupdate.web.cern.ch/physics-preparatory-group-ppg>

PPG MEMBERS	
Strategy Secretariat	
Scientific Secretary (Chair)	Prof. Karl Jakobs (DE)
SPC Chair	Dr Hugh Montgomery (USA)
ECFA Chair	Prof. Pareskevas Sphicas(GR)
LDG Chair	Prof. Dave Newbold (UK)
SPC	
Prof. Pilar Hernandez (ES)	
Prof. Gino Isidori (CH)	
<u>Prof. Fabio Maltoni (BE/IT)</u>	
Prof. Jocelyn Monroe (UK)	
ECFA	
<u>Dr Tommaso Boccali (IT)</u>	
Dr Thomas Bergauer (AT)	
Dr Cristinel Diaconu (FR)	
Prof. Monica Dunford (DE)	
CERN	
Dr Gianluigi Arduini (CERN)	
ASIA/AMERICAS	
Dr Anadi Canepa (USA)	
Prof. Xinchou Lou (China)	
Prof. Rogerio Rosenfeld (Brazil)	
Prof. Yuji Yamazaki (Japan)	

Mandato del CERN Council all'European Strategy Group (ESG)

From CERN/SPC/1239/Rev.2

The ESG should take into consideration:

- the input of the particle physics community;
- the status of implementation of the 2020 Strategy update;
- the accomplishments over recent years, including the results from the LHC and other
- **experiments and facilities worldwide**, the progress in the construction of the **High- Luminosity LHC**, the outcome of the **Future Circular Collider Feasibility Study**, and **recent technological developments in accelerator, detector and computing**;
- the international landscape of the field.

Il goal della riunione di oggi

Input alla ESPP e ”Briefing Book”

To inform the Strategy update, the ESG calls upon the particle-physics community across universities, laboratories and national institutes to provide **input to the process** in various forms and at various stages.

An Open Symposium, at which the community will be invited to debate scientific input into the Strategy update, will take place on **23 - 27 June 2025** at a venue to be determined by the Council in September 2024.

A “Briefing Book” based on the input and discussions will then be prepared by the [Physics Preparatory Group](#) (**PPG, to be established by the Council in September 2024**). The Briefing Book will be submitted to the ESG for consideration during a five-day-long drafting session which is scheduled to take place from 1 to 5 December 2025.

Considerazioni importanti, baseline e possibili scenari alternativi

da Karl Jakobs
July ECFA meeting

- *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*

Come possiamo dare input alla ESPP ?

- Essenzialmente in due modi :
 - Come comunità, ovvero come partecipanti a progetti di interesse alla preparazione del Briefing Book (e.g. FCC, Muon Collider, etc.). Possiamo contribuire agli input document che questi progetti sottometteranno con deadline 31 Marzo 2025.
 - Come INFN : le comunità nazionali possono dare input sia per il 31 Marzo 2025, che in altre due fasi 26 Maggio 2025 (ovvero prima del simposio) che 14 Novembre 2025 (ovvero dopo la finalizzazione del Briefing Book e prima della stesura del documento di strategia da parte dell'ESG)

Come procediamo noi?

- Fortunatamente, intuendo una accelerazione del processo relativo alla prossima Strategy, l' INFN si e' mosso per tempo
- Il [workshop INFN](#) del 6 e 7 Maggio ha anticipato ed è consistente con quanto presentato e discusso da Segretariato ESPP.
 - Dobbiamo continuare il lavoro sia sul progetto baseline (FCC) che su progetti complementari o alternativi
- La preparazione dei documenti che si pensa di utilizzare come Input alla prossima ESPP è in linea con quanto richiesto o suggerito

Come procediamo noi?

- L' INFN ha istituito un **Gruppo di Lavoro (GdL)** composto dai Presidenti delle Commissioni Scientifiche Nazionali, dai Direttori dei Laboratori Nazionali, dal Coordinatore del MAC e da un rappresentante attività inerenti Calcolo la nostra comunità scientifica (CNC). Il GdL è guidato da uno steering group*.
- **I Presidenti delle CSN**, oltre ad organizzare eventi interni, inviteranno i loro Coordinatori a avviare **presentazioni e discussioni locali sulle attività di interesse per la ESPP**, in accordo con i rispettivi Direttori. Le conclusioni che scaturiranno da questi incontri saranno condivise con gli stessi Presidenti.
- **I Direttori dei Laboratori** avvieranno una discussione, presso la comunità scientifica dei Laboratori da loro diretti, che metta in risalto soprattutto i **contributi che essi possono offrire in base alle infrastrutture di ricerca disponibili presso i Laboratori stessi**.

*Steering group : Marco Ciuchini (GE), Sandra Malvezzi (GE), Aleandro Nisati, Roberto Tenchini (Pres. CSN1), Cecilia Borca (Rappresentate ECR)

Come procediamo noi?

- **I Presidenti delle CSN e i Direttori dei Laboratori dovranno produrre un documento** da inviare allo Steering Group INFN; esso sintetizzerà i risultati del processo all'interno delle CSN e dei Lab e potrà eventualmente essere sottomesso come input alla Strategy.
- **Il Coordinatore del MAC** curerà la preparazione di un **documento che raccolga in modo omogeneo gli 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.
- **Il Rappresentante Calcolo** curerà la preparazione di un documento che raccolga in modo omogeneo gli studi degli aspetti legati al calcolo per i progetti futuri.

Come procediamo noi?

- 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.
- Riunioni svolte e previste dello Steering con il GdL, previsto anche un evento pubblico finale il 4 Febbraio 2025 a Milano – da confermare!
 - Possibili riunioni anche dopo il Simposio e prima della riunione dell' ESG