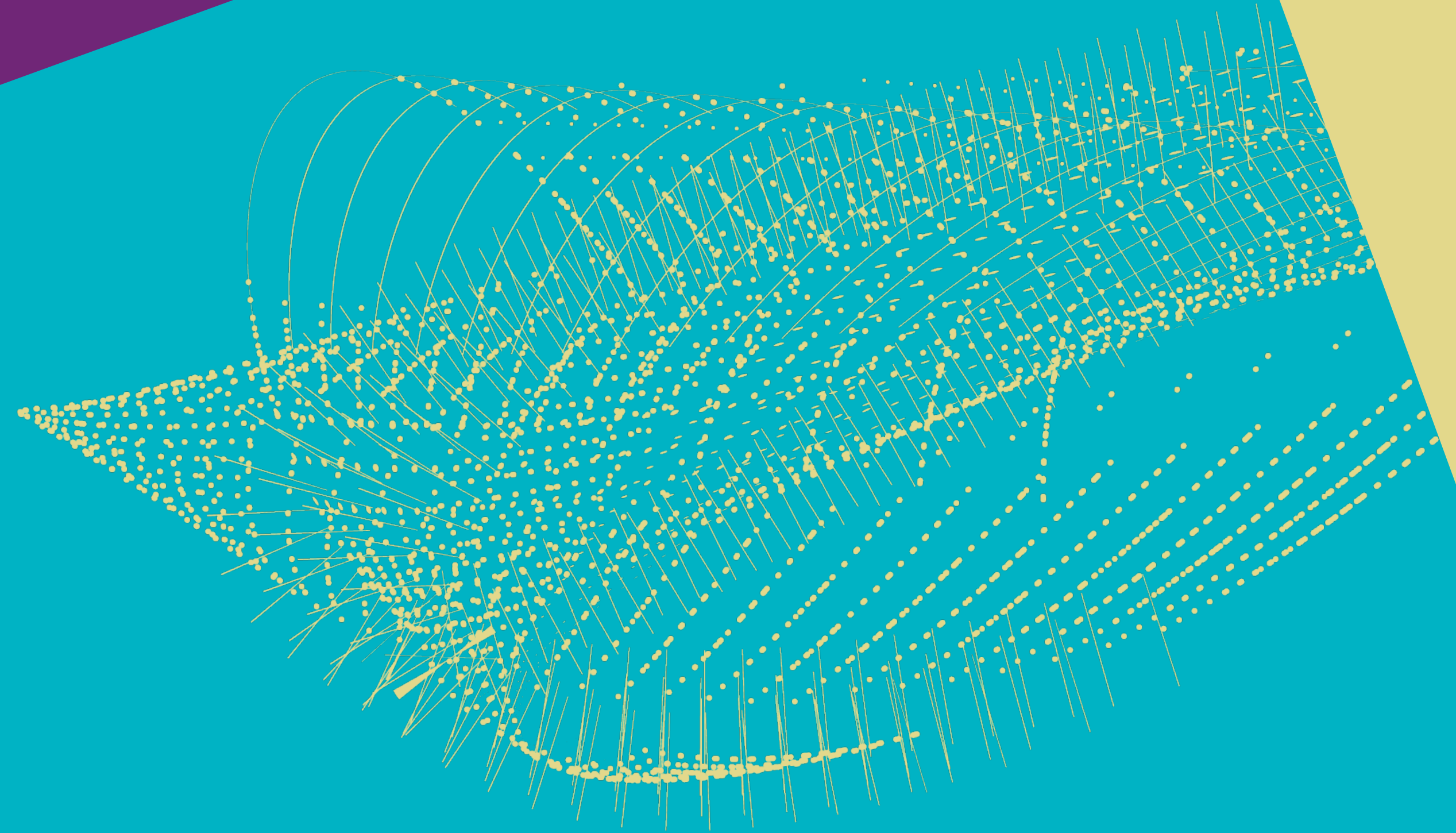




16 SEPTEMBER 2025

INTRODUCTION

Nikhef ESPP
strategy meeting



OPEN SYMPOSIUM - VENICE



INITIAL INPUT DOCUMENT

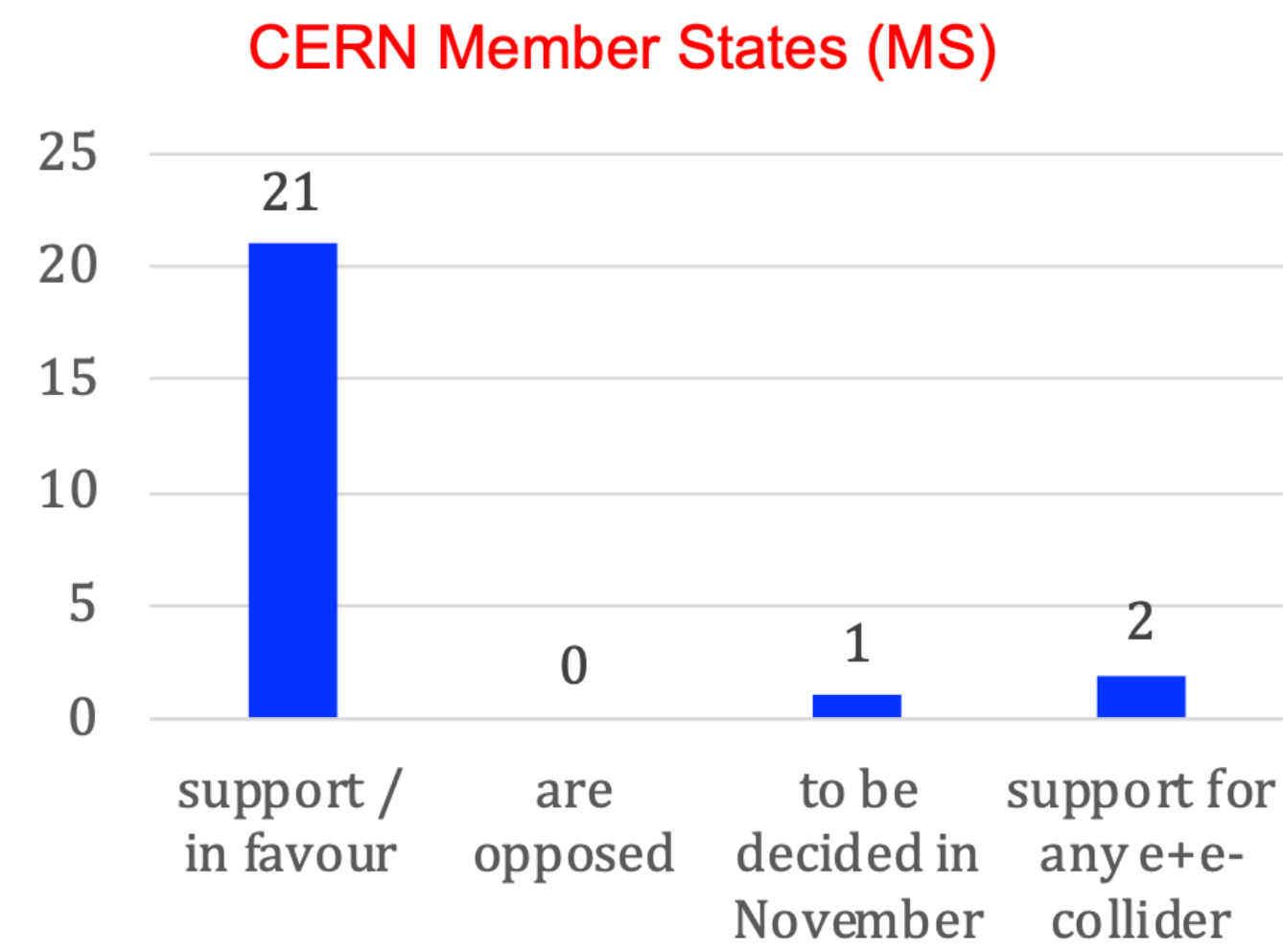
Our initial input: focuses on the elements that we consider important for deciding on the next collider, as well as on scientific diversity.

We have not yet stated our preferred future collider and alternative preference.

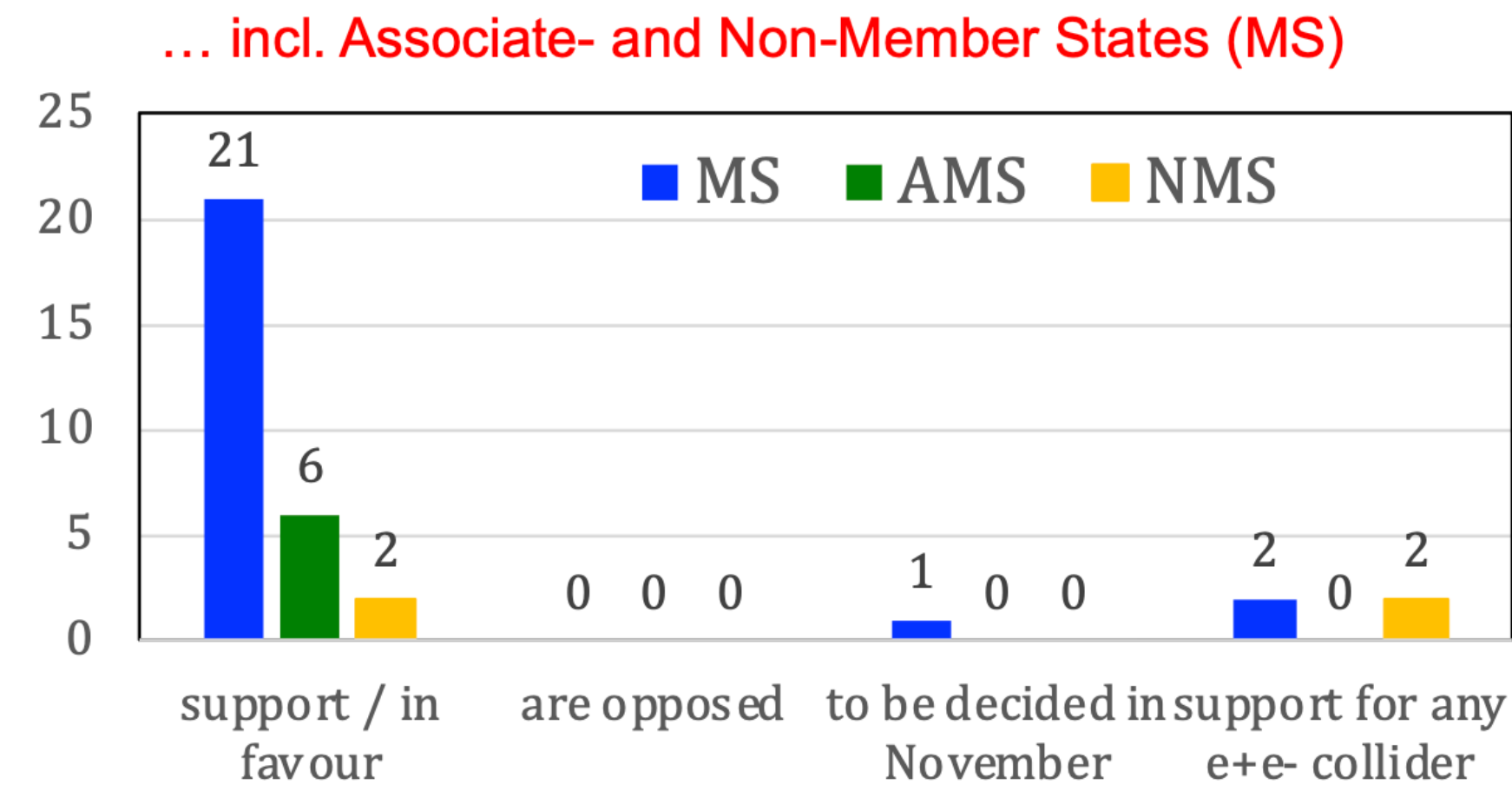
The reason for this is that the information required to make an informed decision was only available after the deadline.

AIM OF THE THREE STRATEGY MEETINGS

What is the preferred large-scale accelerator for CERN



- Overwhelming support (21/24 CERN MS HEP communities) in favour of the integrated FCC-ee/hh programme



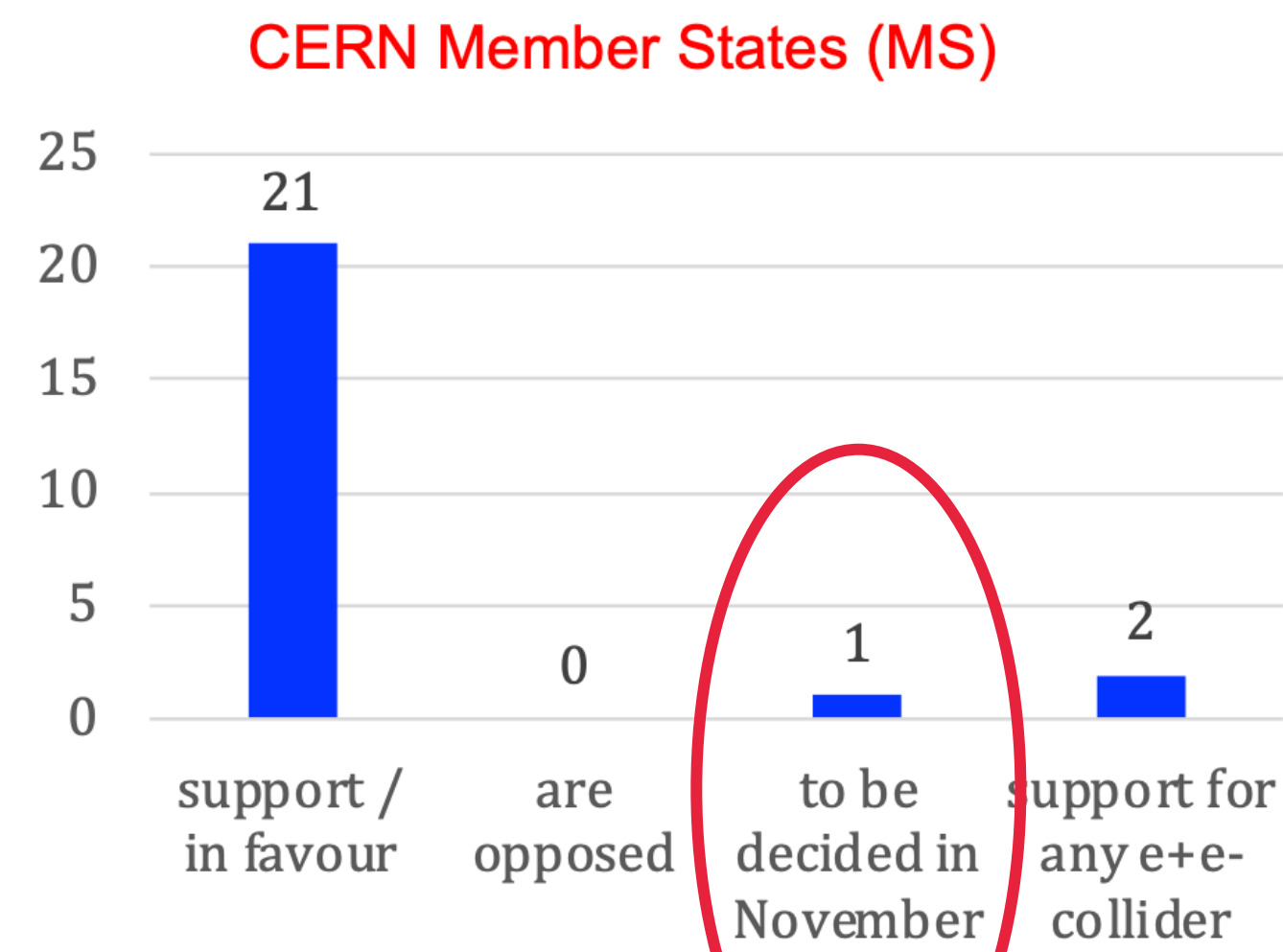
- Support as well from Associate Member states (AMS) and Non-member states (NMS)



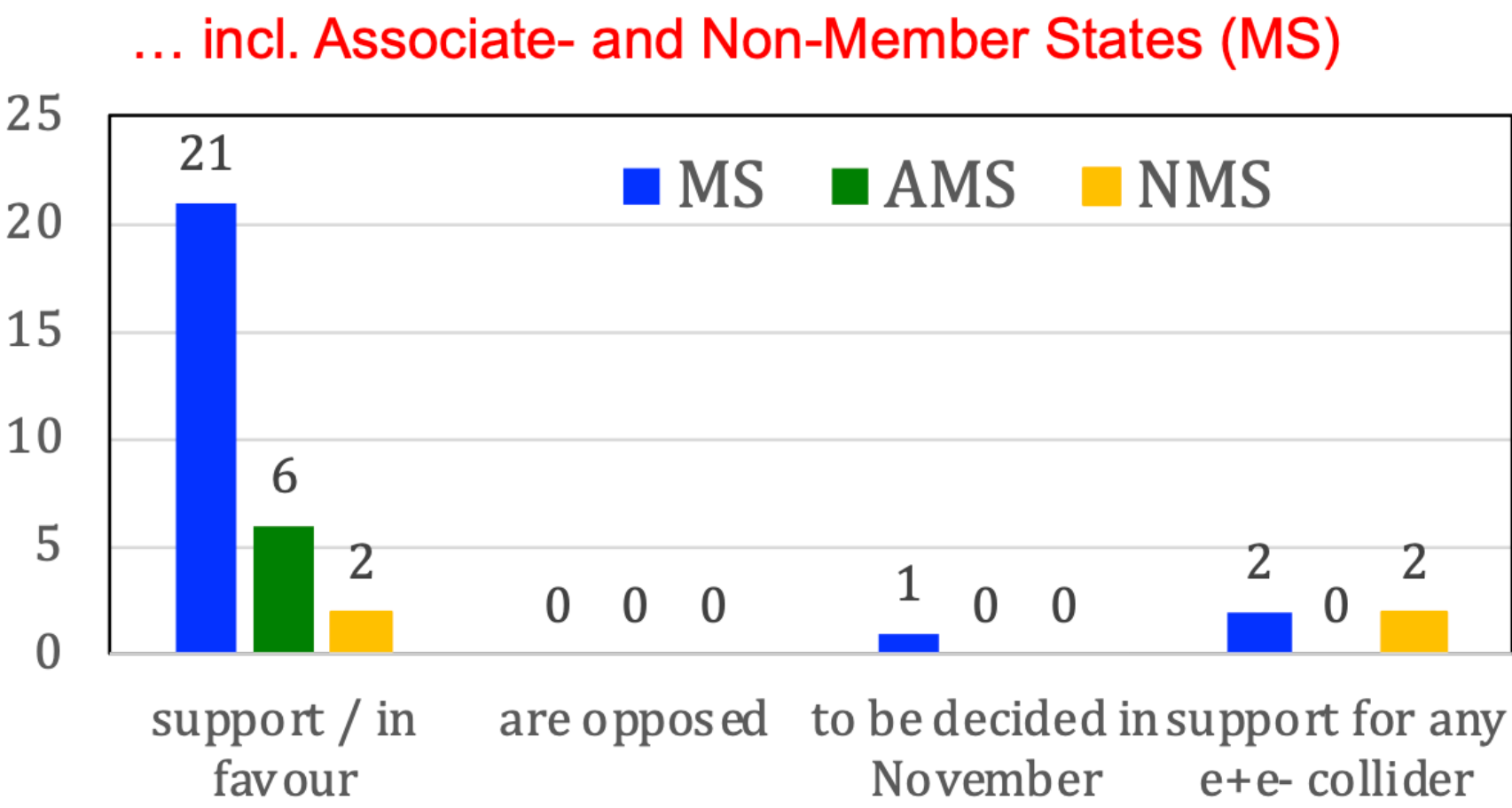
K. Jakobs, ESPP Open Symposium, 27th June 2025

AIM OF THE THREE STRATEGY MEETINGS

What is the preferred large-scale accelerator for CERN



- Overwhelming support (21/24 CERN MS HEP communities) in favour of the integrated FCC-ee/hh programme



- Support as well from Associate Member states (AMS) and Non-member states (NMS)

Nikhef



K. Jakobs, ESPP Open Symposium, 27th June 2025

ECFA GUIDELINES FOR COLLECTING THE INPUT (I)

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):
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 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.

ECFA GUIDELINES FOR COLLECTING THE INPUT (II)

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. highfield 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).

ECFA GUIDELINES FOR COLLECTING THE INPUT (III)

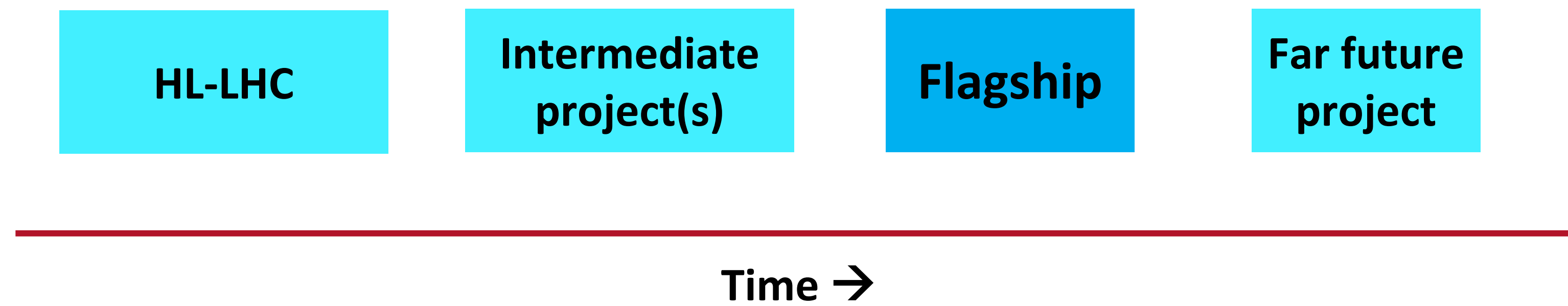
4) The remit given to the ESG also specifies that “The Strategy update should also indicate areas of priority for exploration complementary to colliders and for other experiments to be considered at CERN and at other laboratories in Europe, as well as for participation in projects outside Europe.” It 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.

PREFERRED COLLIDER VS PREFERRED SCENARIO

Flagship

PREFERRED COLLIDER VS PREFERRED SCENARIO



EXTENDED INPUT

We will not replace our initial input, but rather write an addendum to it.

This addendum will state the following:

- Our preferred scenario and our preferred alternative scenario;
- Information on what we would advise in the event that a major collider (e.g. CEPC) is built elsewhere;
- Enhancement of the most important key elements/statements.

KEY ELEMENTS

- Physics motivation
- attractive and innovative R&D programme
- the time gap between the HL-LHC and the next flagship collider
- Flexibility
- Environmental impact & long-term sustainability
- Scientific diversity (both within collider PP and in (A)PP in general)
- Completion of HL-LHC
- Broad physics programme
- Technocological innovation
- Global collaboration

These elements will also be used to compare different future collider scenarios.

AIM OF THE THREE STRATEGY MEETINGS

First strategy meeting - 16 September 2025

The goal of the first meeting is to prepare everyone for the second strategy meeting and to provide the information that is necessary to write the final input

Second strategy meeting - Thursday 2 October 2025

The goal of the second meeting is to arrive at a preferred future collider scenario and an alternative scenario, and if this turns out not to be possible to collect as many opinions and ideas as possible to derive from this the preferred and alternative scenario.

Also, discuss which key statements/elements should be enhanced in our extended input.

Third strategy meeting - Friday 31 October 2025

This will be the final reading of statements to put in our final input document. We will also discuss the answers to the ECFA questions.

OUTLINE OF TODAY'S STRATEGY MEETING

- 13:00-13:30 Introduction and scope strategy meetings – Rosemarie, editorial team
- 13:30-14:00 Open symposium summary: Large projects – Pamela, Clara & Tristan
- 14:00-14:15 Short break
- 14:15-14:45 Open symposium summary: SM measurements, indirect searches, neutrino physics, flavour physics – Juan, Jacco, Patrick K.
- 14:45-15:15 Open symposium summary: Search for new physics at multi-TeV scale, direct searches, dark matter – Flavia, Lydia, Mara
- 15:15-15:25 Thoughts on the Open Symposium – Andrea, other participants open symposium
- 15:25-15:55 Break with cookies
- 15:55-16:30 Introduction to future collider scenarios – Jorgen
- 16:30-17:00 Discussion session to prepare for the next strategy meeting
- 17:00-18:00 Drinks

OUTLINE OF TODAY'S STRATEGY MEETING

After every presentation there is time for clarifying questions, discussion time is at the end of the day and during the next meeting.

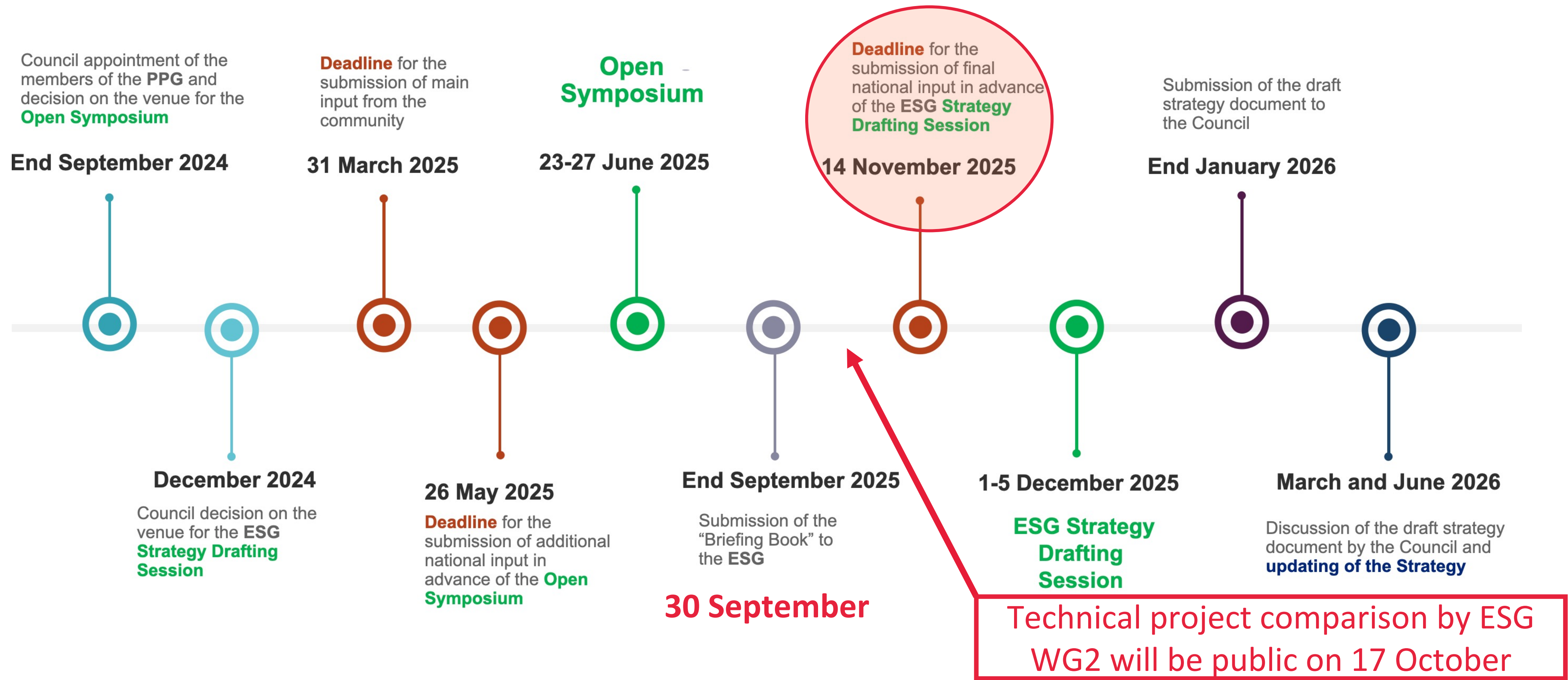
The summary presentations cannot go into full detail. For all information, see the Open Symposium slides and recordings:

<https://agenda.infn.it/event/44943/timetable/#20250623.detailed>

<https://www.youtube.com/playlist?list=PLbsqUzxZlcP5p4izedCWb7EOP-ZkSH495>

ESPP PROCESS TIMELINE

PALAZZO DEL CASINO,
VENICE, ITALY



BACK-UP SLIDES

ECFA GUIDELINES FOR COLLECTING THE INPUT (II)

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. highfield 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).

**Focus of
initial Dutch
input**

ECFA GUIDELINES FOR COLLECTING THE INPUT (III)

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.

Focus of
initial Dutch
input