

IDEA Study Group News

7th IDEA Study Group meeting
June 17, 2025

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📍 Most important recent event was the FCC week in Wien: <https://indico.cern.ch/event/1408515/overview>



614 participants (58 remote), 56 public sessions, 230 oral presentations, 33 posters
 PED: 3 plenary talks, 2+2 summary talks, 55 parallel talks

2026 FCC week: 8-12 June @ Helsinki

Updated project cost for FCC-ee up to and including operation at ZH and 4 experiments
t-tbar upgrade requires additional 1.3 BCHF

Domain	Cost [MCHF]
Civil engineering	6160
Technical infrastructures	2840
Injectors and transfer lines	590
Booster and collider	4140
CERN contribution to four experiments	290
FCC-ee total	14 020
+ Four experiments (non-CERN part)	1300
FCC-ee total, including four experiments	15 320

Funding of FCC (and any other major future collider project) will come from two main sources:

- ❑ **CERN Budget** (i.e. revenues from Member and Associate Member States): would cover more than 50% of FCC investment cost
- ❑ **External contributions:**
 - additional voluntary contributions (in-cash or in-kind) from **Member and Associate Member States**
 - contributions from **non-Member States**
 - exploring possible contributions from the **European Union in the next Multiannual Financial Framework** (MFF 2028-2034)
 - exploring possible contributions of **private donors** (→ in Dec 2024, Council approved “*Policy for fundraising from private donors for scientific activities at CERN*”)

Several funding models developed, based on different assumptions (e.g. constant or slightly increased CERN Budget)
→ final report will be submitted to Council and its subordinate bodies in August

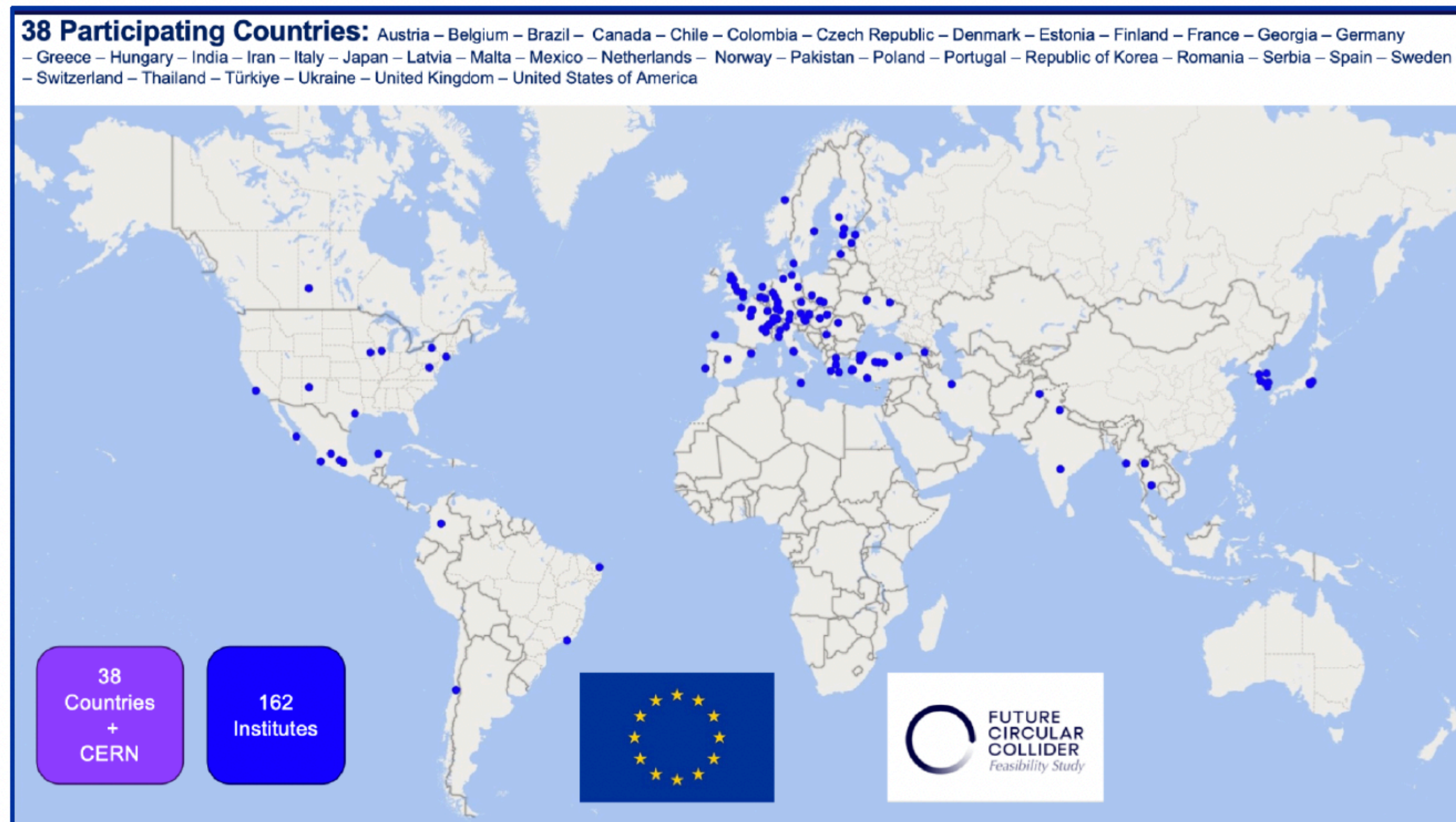
F. Gianotti

FCC and the HEP community

In addition to the growing awareness of, and support for the project in CERN's Member States, non-Member States and the EU:

- ❑ FCC Collaboration is strong and expanding
- ❑ National input to the ESPP: overwhelming support for FCC as the next collider at CERN
- ❑ Large number (~ 40) of expressions of interest for participation in the FCC detector developments submitted to the ESPP

This bottom-up pressure from the community is also crucial to securing the needed funding



Jun-Jul 2025: [review of Feasibility Study Report by Cost Review Panel and FCC Scientific Advisory Committee](#)

8-9 Sep 2025: [review of Feasibility Study Report and funding model report by Scientific Policy Committee and Finance Committee](#)

6-7 Nov 2025: [review of both reports by Council](#)

Other relevant milestones for all projects:

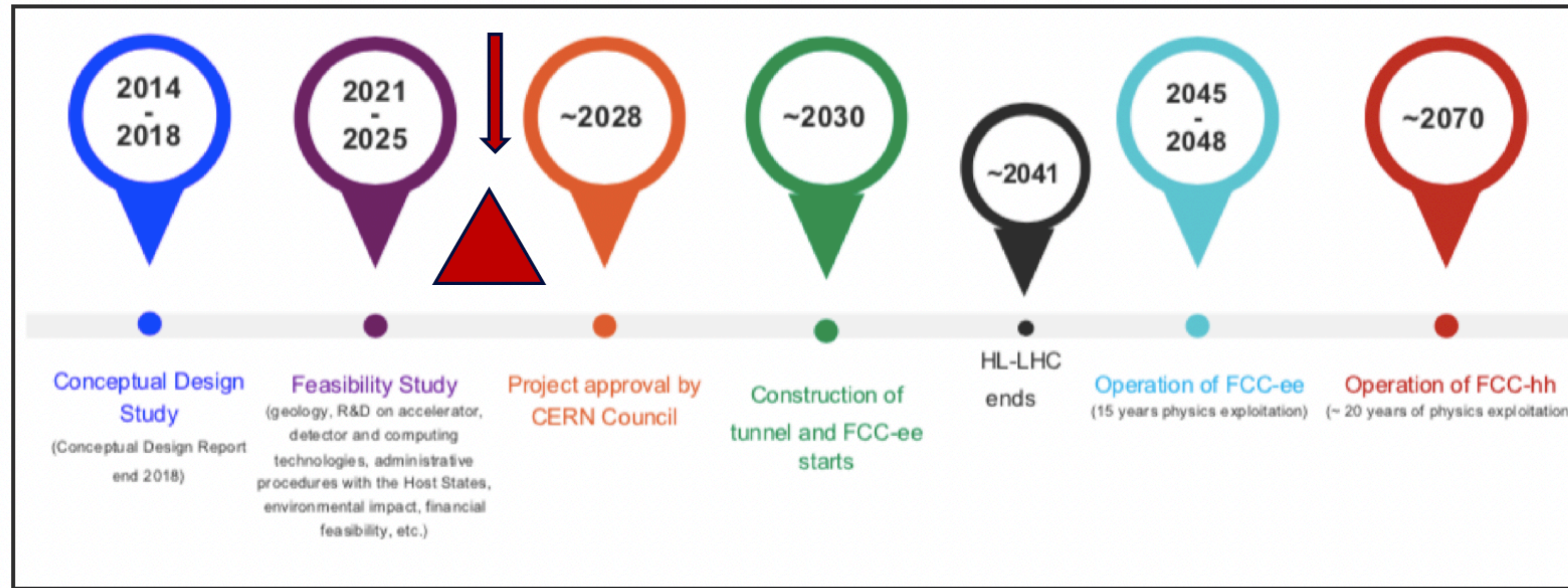
23-27 Jun 2025: [ESPP Open Symposium](#)

1-5 Dec 2025: [ESPP drafting session](#)

Jan 2026: [ESPP draft document submitted to Council](#)

29 May 2026: [ESPP decision making by the Council](#)

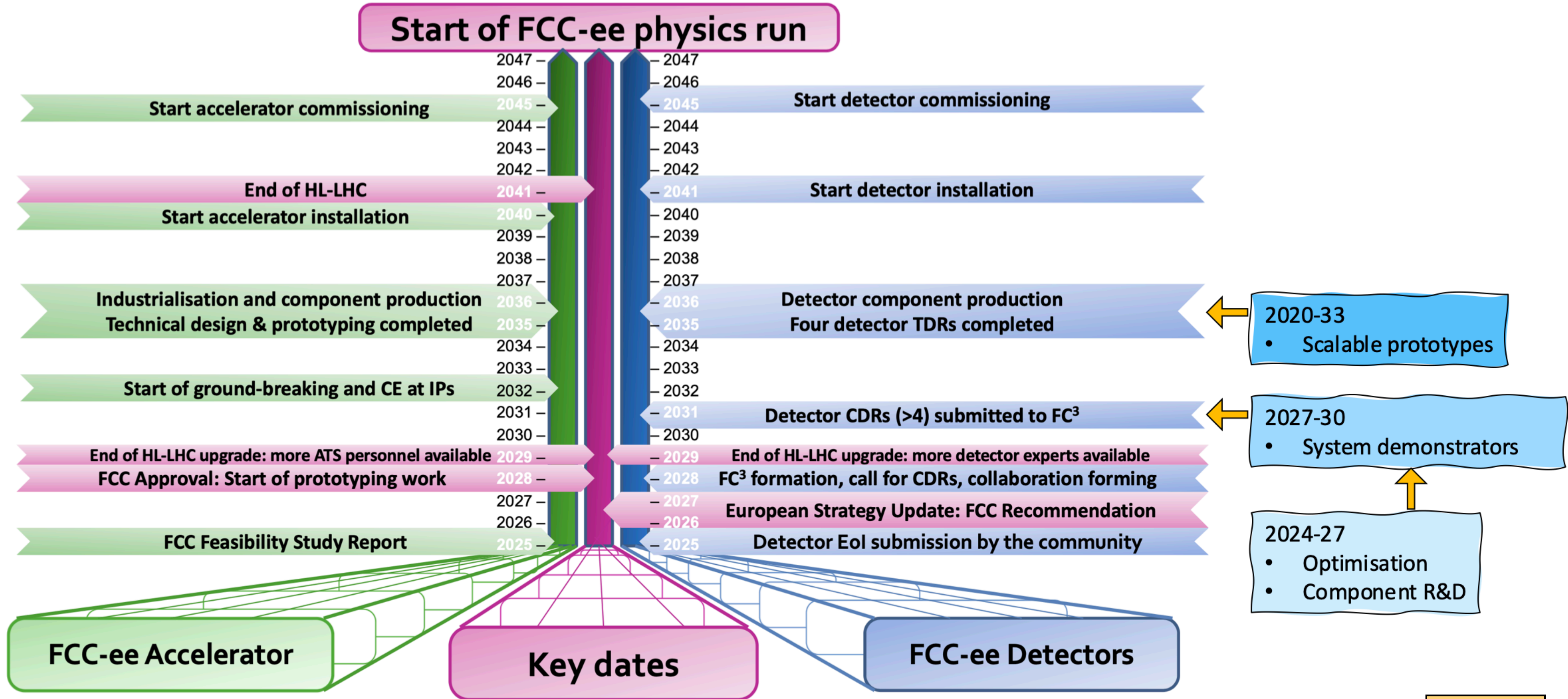
Preparing for the Next Phase: from Feasibility to Decision



The next phase of the study ("pre-TDR") will position the project for a decision by CERN Council around 2028.

- ❑ **Timeline: April 2025 – December 2027**
- ❑ **Preliminary budget envelope: ~150 MCHF** (allocation for 2026–2027 subject to Council decision in November 2025)
- ❑ **Main objective: further development of main components;** deliver a consolidated **cost estimate with significantly reduced uncertainty** (aim: Class 2, +5–20% for main components)
- ❑ **Key deliverables:**
 - detailed R&D and engineering design for technical systems and civil infrastructure
 - full integration study to support cost estimation and implementation planning
 - quantitative environmental impact assessment, including mitigation measures
 - CERN contributions to detector conceptual design and integration

Possible Timeline



M. Dam

Evolution of Detector Concepts Work Package

- In DRDs:

- RnD / technologies

- Gaseous Detectors (DRD1)
- Liquid Detectors (DRD2)
- Semiconductor Detectors (DRD3)
- Photodetectors & PID (DRD4)
- Quantum Sensors (DRD5)
- Calorimetry (DRD6)
- Electronics (DRD7)
- Mechanics (DRD8)

In FCC Detector concepts:

a) Generic system-level studies (create structure as needed or organize workshops)

- Tracker (e.g. Si + straw tracker)
- Calorimetry
- PID & Muons
- TDAQ
- Luminometry
- Magnet



b) Concept-specific studies (using specific envelopes/support structures, or physics benchmarks)

- Allegro
- CLD
- IDEA
- ILD

Non-exclusive membership, need to preserve synergies and unity of the community!

US R&D Collaborations (RDCs) focus on generic (non-targeted), interdisciplinary and blue sky R&D – will collaborate where possible.

📌 Open Symposium of the ESPP, Lido di Venezia, 23-27 June 2025: <https://agenda.infn.it/event/44943/overview>

- a. Dedicated session “Large scale accelerator projects at CERN”, Tuesday morning
 - FCC-ee (including common infrastructure) by M. Benedikt
 - FCC-hh by F. Zimmermann
- b. Reports by various PPG working groups

📌 We have the **IDEA Study Group meetings** on the **3rd Tuesday** of every month

📌 Next meeting on **Tuesday July 15th**