



VIEW FROM THE CERN COUNCIL

FCC WEEK LONDON

Eliezer Rabinovici, President of the CERN Council

5 JUNE 2023

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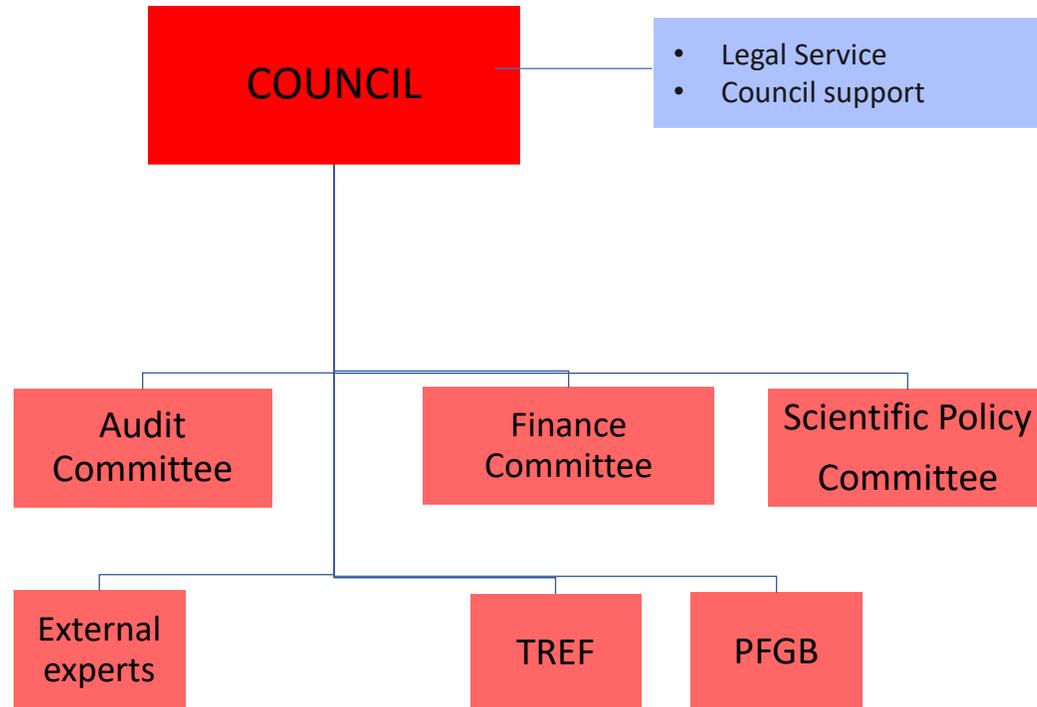
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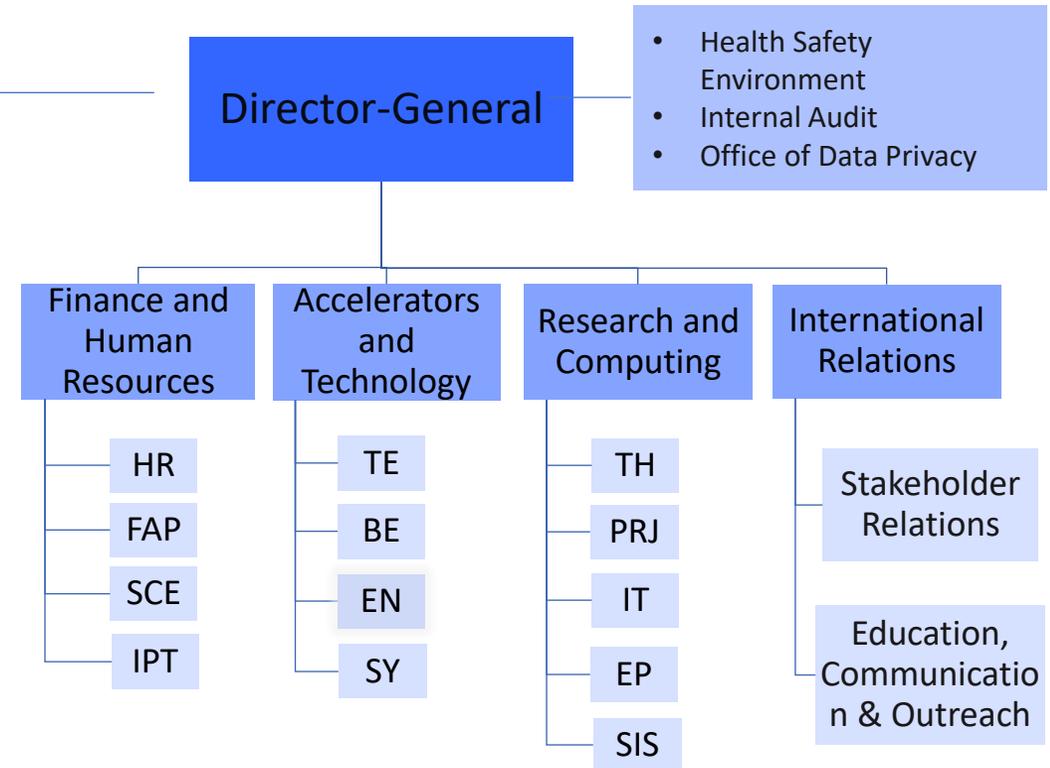
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The governance structure

Supreme Decision-Making Authority



Management structure



State and institutional participation in CERN



23 Member States:

1954 Belgium, Denmark, France, Germany, Greece, Italy, Netherlands, Norway, Sweden, Switzerland, United Kingdom, Yugoslavia

1959 Austria, **1983** Spain, **1986** Portugal, **1991** Finland, Poland, **1992** Hungary, **1993** Czech Republic, Slovakia, **1999** Bulgaria, **2014** Israel, **2016** Romania, **2019** Serbia

Pre-Stage to Membership: Cyprus (2016), Slovenia (2017), Estonia (2020)

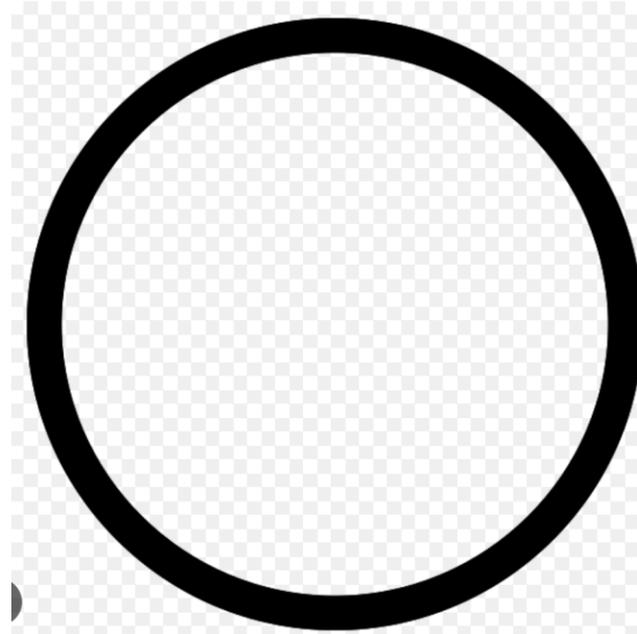
Associate Member States: Turkey (2015), Pakistan (2015), Ukraine (2016), India (2017), Lithuania (2018), Croatia (2019), Latvia (2020)

Applications: Brazil

Observer States: Japan, United States of America (Russian Federation suspended March 2022)

Observer institutions: UNESCO, European Union, JINR

WHAT ARE THE OPTIONS ?



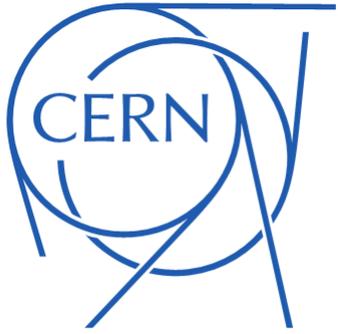


BOTTOM-UP APPROACH

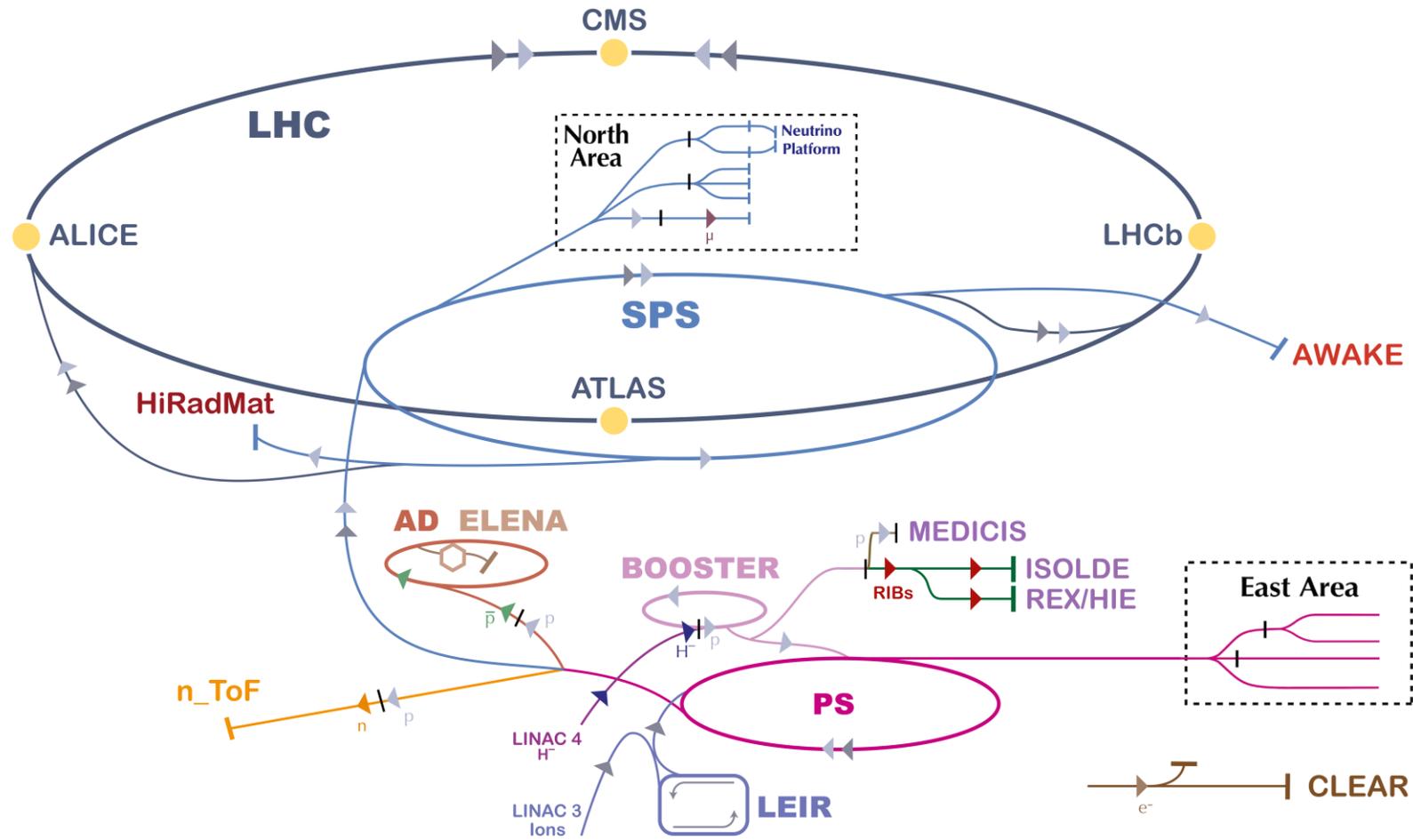
European Strategy for Particle Physics (ESPP)

- First Strategy adopted by the Council in 2006 –bottom up No-brainer` (LHC) - Orsay-Zeuthen- Lisbon
- First update adopted in 2013 - bottom-up Krakow-Erice-Brussels - HL-LHC, future vision (FCC, ILC, CLIC and others)
- Second update adopted 2020 – bottom-up Granada-Bad Honnef –CERN (Budapest)
- The ESPP update adopted by the Council in June 2020 called for:

“a technical and financial feasibility of a future hadron collider at CERN with a centre-of-mass energy of at least 100 TeV and with an electron-positron Higgs and electroweak factory as a possible first stage. Such a feasibility study of the colliders and related infrastructure should be established as a global endeavour and be completed on the timescale of the next Strategy update.”



CERN- STABILITY AND INNOVATION



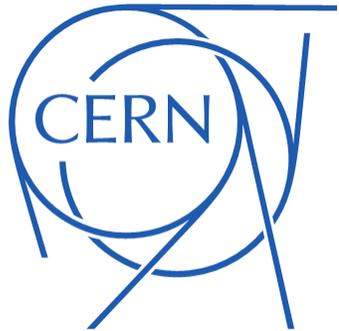
▶ H^- (hydrogen anion) ▶ p (protons) ▶ ions ▶ RIBs (Radioactive Ion Beams) ▶ n (neutrons) ▶ \bar{p} (antiprotons) ▶ e^- (electrons)

7



CERN COUNCIL ALSO PROVIDES STABILITY

- **OVER 25 YEARS 1998-2022, OVER 29 BILLION CHF (RINGS A BELL?)**
- **YEAR BY YEAR –FIXED AND INDEXED BUDGET. 100% PAID.**
- **STEPPING UP TO THE PLATE IN CHALLENGING POLITICAL AND FINANCIAL TIMES.**
- **WILLING TO CONTINUE TO PROVIDE LEADERSHIP BY CERN OFFERING THE BEST SCIENTIFIC AND TECHNOLOGICAL PROGRAM**



CERN-PROVIDED SCIENCE

-ISR..SPS, Ppbar, LEP, LHC- 13.6 TEV, HL-LHC
- NEUTRAL CURRENTS-NEUTRINO (COLLABORATION WITH USA)
- W, Z, HIGGS – 67 NEW HADRONS INCLUDING PENTAQUARKS
- AMAZING PROGRESS IN ACCELERATOR TECHNOLOGY.
- AND YES, WWW...SUSTAINABILITY PROGRESS.



COMMON: MAINTAIN A LEADERSHIP VIA A VISION

CERN TO PROVIDE THE BEST SCIENCE AND TECHNOLOGY ARENA.

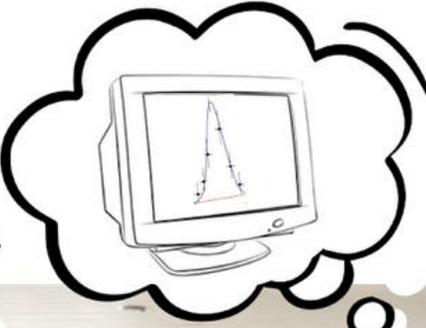
- **WHAT VISION? CONSIDERATIONS AND CONCERNS**
- **Scientific (Higgs and?)**
- **Technological (HL and High Field Magnets)**
- **New Detectors**
- **Construction: Geology , Environment**
- **Financial**
- **ECRs?**
- **Politics and overlap issue.**

THE FUTURE REQUIRES SCIENTIFIC AND TECHNOLOGICAL VISION.

EXCELLENCE IS EXTREMELY HARD TO ACHIEVE AND SO EASY TO LOOSE.



0.0000000000001
or
0.0000000000002





FCC FEASIBILITY STUDY

FCC Parameters

The image shows an aerial view of the CERN site with several particle accelerators overlaid. The LHC is shown as an orange oval, the SPS as a blue oval, the PS as a green oval, and the FCC as a yellow dashed line. The background is a landscape with mountains and a clear blue sky.

LHC **SPS** **PS** **FCC**



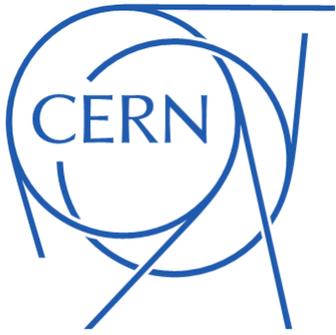
<http://cern.ch/fcc>



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photo: J. Wenninger



SPECIAL COUNCIL MEETING

2 FEBRUARY 2024

MID-TERM REVIEW
OF THE FEASIBILITY STUDY (FINAL 2025)

2027(?)-SEVEN YEAR LEAPS- NEXT STRATEGY GROUP MEETING – STARTING SOON