



Post LHC Collider?

Arnaud Marsollier – Head Press & Digital
Interactions - November 2023

An ongoing feasibility study for a Future Circular Collider...



90-kilometre-long ring

End of the study 2025

Decision around 2028?

Start operations... 2045?

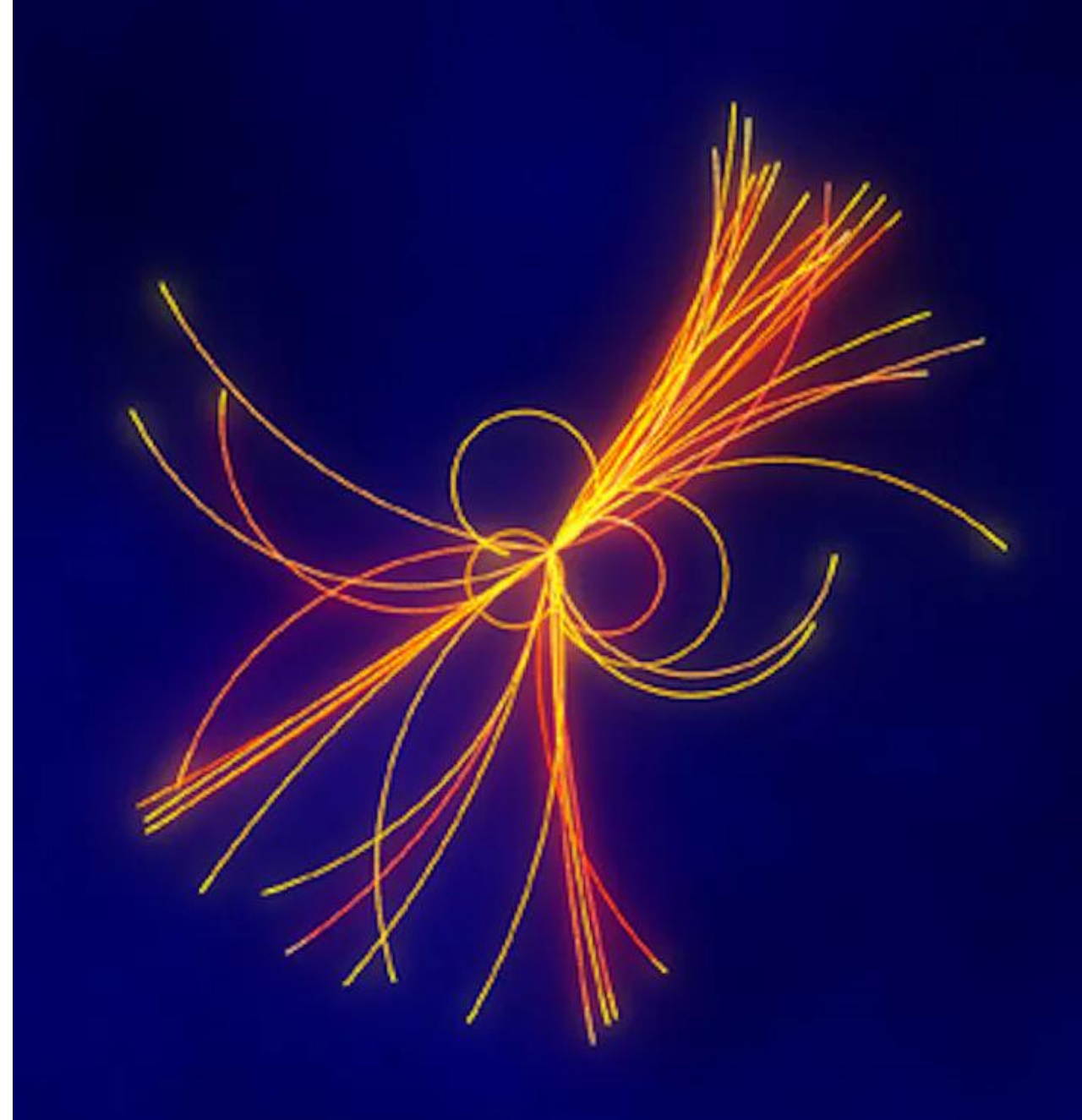
Why?

...Because Higgs!

Put the Higgs, (W, and Z bosons) **under the microscope** and map all their properties with great accuracy. Understand better known phenomena.

Precision - Probing new physics, and **put the standard model under pressure!**

Improve by orders of magnitude the **sensitivity to rare phenomena at low energies**, including the possible discovery of light particles



Who?



2020 European Strategy Update

“An electron-positron Higgs factory is the highest- priority next collider. For the longer term, the European particle physics community has the ambition to operate a proton-proton collider at the highest achievable energy.”

Snowmass 2021

“The intermediate future is an $e+e-$ Higgs factory, either based on a linear (ILC, C3) or circular collider (FCC-ee, CepC).

(Energy Frontier Plenary by Alessandro Tricoli)

FCC Global collaboration:

150 institutes
34 countries

A tunnel

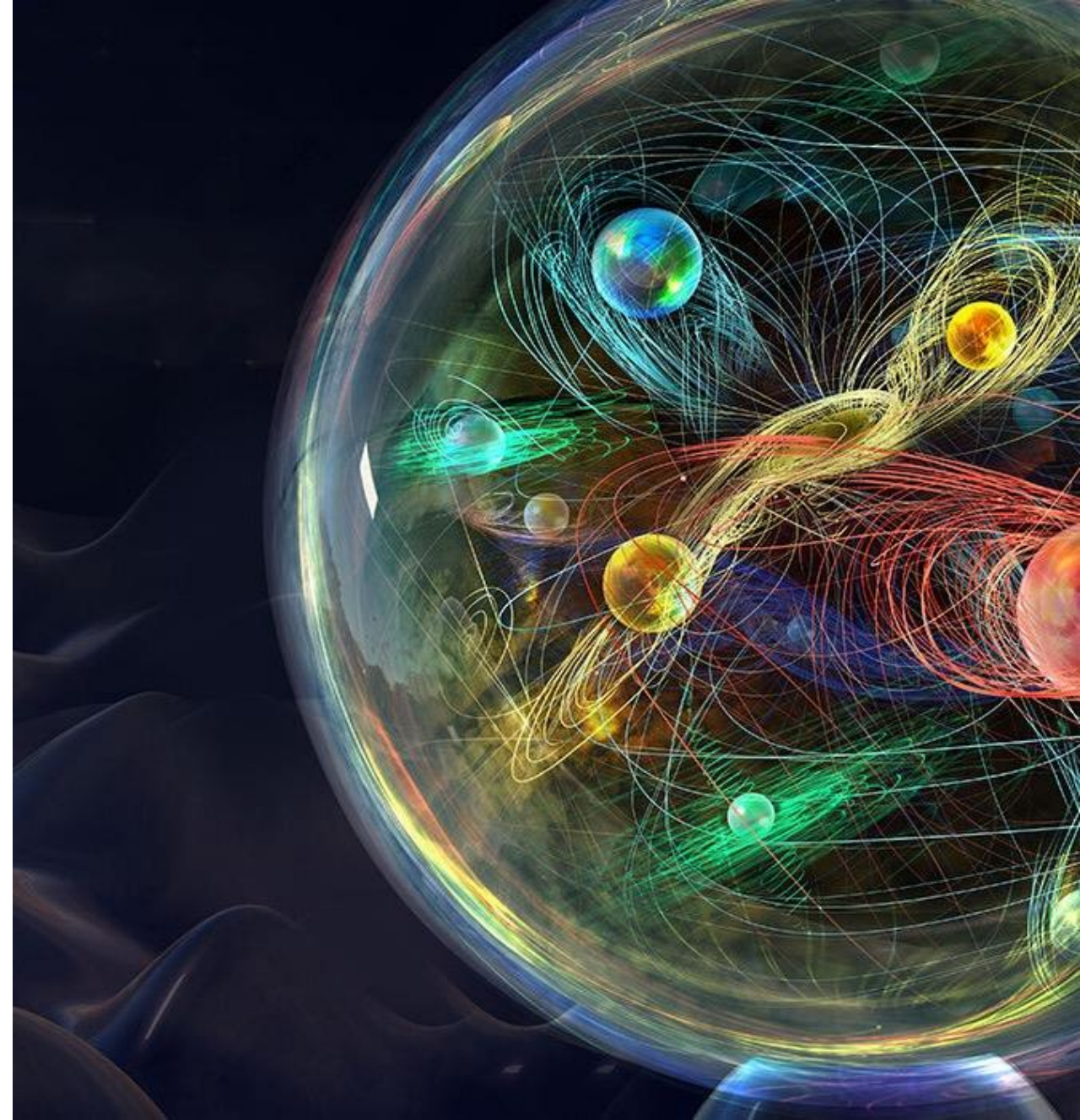
...for the next 70 years!

1st stage collider, FCC-ee - electrons

- **INTENSITY FRONTIER Precision** & discovery
- Construction: 2033-2045
- Physics operation: 2048-2063

2nd stage collider, FCC-hh – protons ≥ 100 TeV

- **ENERGY FRONTIER Discovery** & Precision
- Physics operation: 2070-2095...?
- Full new physics potential!



Status & Next steps?

- **Mid term review ongoing – available and presented within special Council session early February 2024**
- **Geology drillings starting around mid-2024**
- **Engagement with municipalities and local authorities is part of the feasibility study – well ongoing / more to come**



Challenges?

- **Massive project = Massive responsibility**
- **Environmental aspects are concerns for a local association (and green politicians)**
- **Costs and acceptability**
- **Technical aspects – no show stopper, but huge work...**
- **Timeline!**

...

DL « Un coup de massue pour l'environnement » : le futur collisionneur du Cern inquiète

Est-il défendable de construire un nouvel accélérateur à particules géant au regard de la crise climatique que nous traversons ? C'était toute la question posée par l'association Noé 21 avec des élus français et suisses ce mercredi soir. Consommation d'électricité, déblais, CO2... ils ont fait un tour d'horizon de leurs inquiétudes.

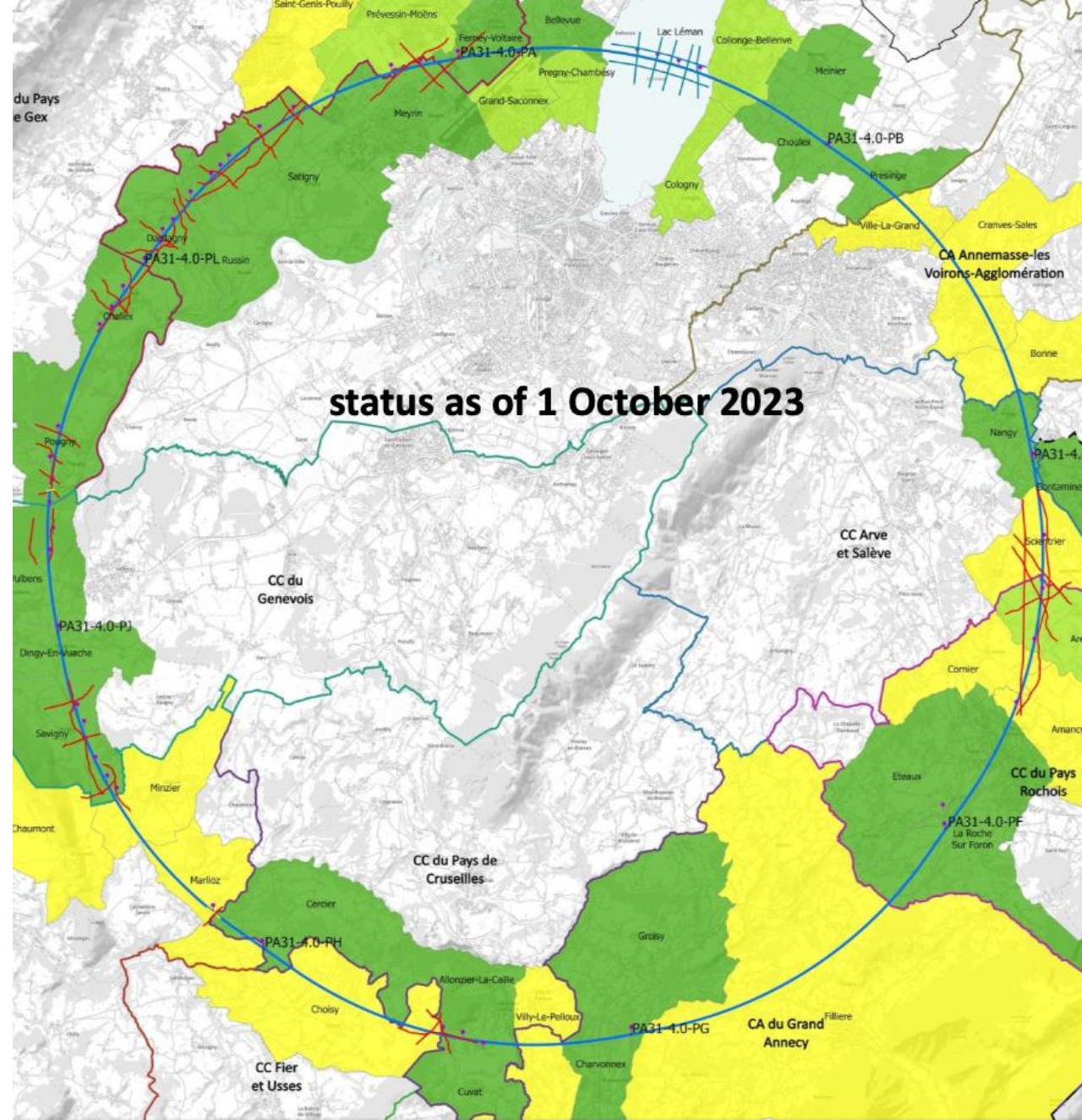
Suzie Georges – 05 oct. 2023 à 18:26 | mis à jour le 05 oct. 2023 à 18:33 – Temps de lecture : 4 min



Les élus et une réunion
DL /S.G.

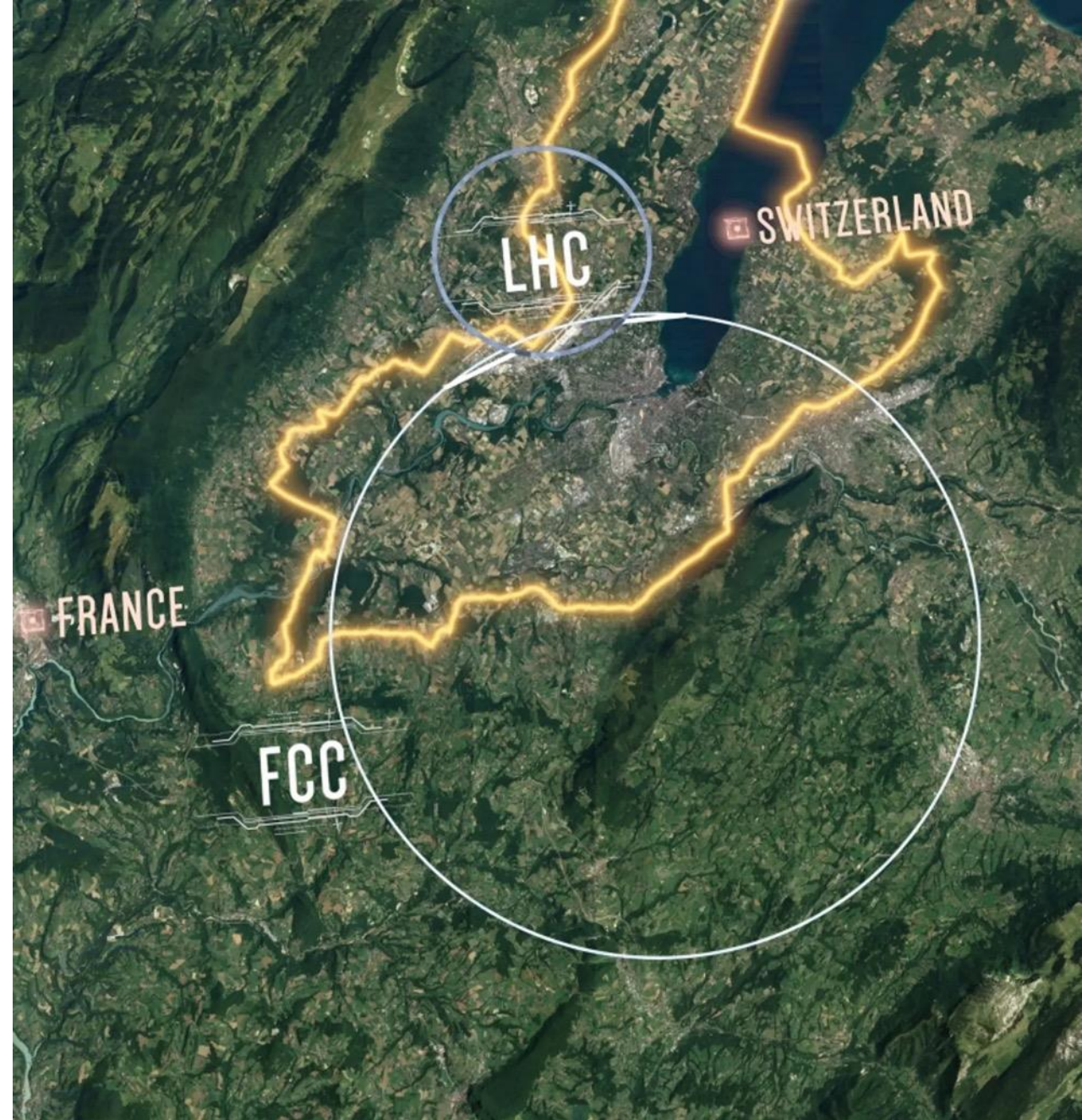
What it means for our communications

- Local engagement will need to ramp up, as well as more communications
- Need to produce lot of content, specific to Scientific community, local community, politicians...



Key moments - 2024

- **February 2024: PR around mid term review findings, next steps etc.**
- **April 2024: open presentation and discussion with local public - @CERN**
- **Spring – Summer 2024: local engagement activities around the ring, to go and meet people closer to FCC sites – both in France and Switzerland**





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