

# European strategy: news from CERN Council

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## ○ Update of the European Strategy in Particle Physics (ESPP)

—drafted by the Strategy Group (chaired by Tatsuya Nakada)

—two documents produced:

- European Strategy paper itself (17 statements, a–q)
- Deliberation paper, explaining the strategy statements and giving some suggestions on future organizational matters:
  - to be discussed soon by Council

## ○ Discussion by CERN Council in March session

—very wide support for proposed ESPP

—very few changes made

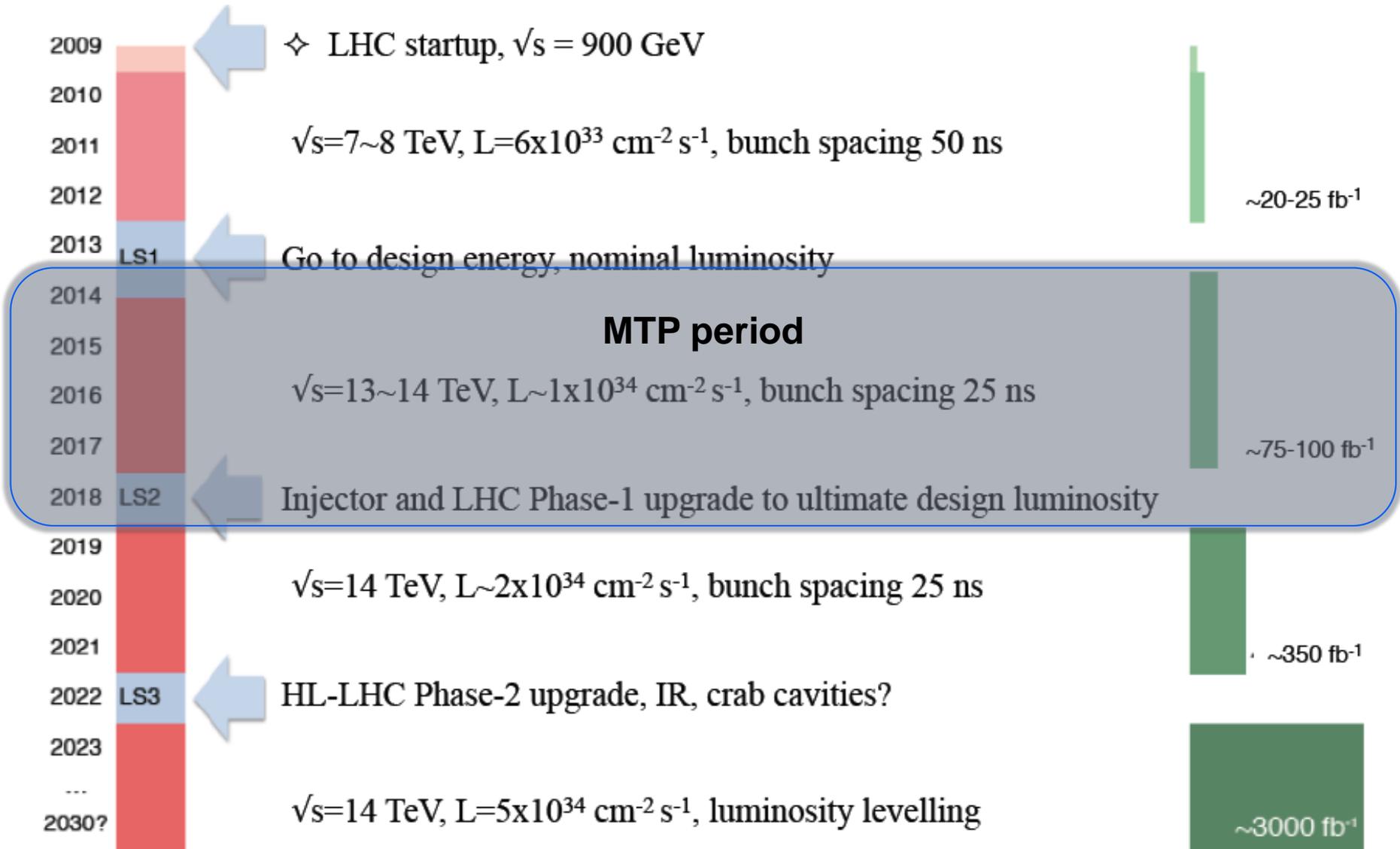
- item h on precision experiments (e.g. flavour physics) with unique reach:
  - mention « other regions » of the world, rather than « US and Japan » (requested by France, supported by all)
- item m on relationships with European commission
  - basically re-written (requested by EC)

- **Update strategy unanimously adopted on May 30, 2013 in a special Council session in Brussels, hosted by the EC**
  - several accompanying events
    - press conference (May 29)
    - visit to European parliament (lunch, May 29)
    - round table discussion:  
« What do we get from basic science ? » (May 29)
    - visit to EU Competitiveness council (lunch, May 30)
    - exhibition, outreach (May 29–30)
  - glossy brochure produced by the European Particle Physics Communication Network, explaining social relevance of our field
- **New strategy presented on June 13, 2013 to State Secretary Dell’Ambrogio:**
  - Klaus Kirch (CHIPP), Tatsuya Nakada (ESG), Swiss delegation, ...
- **All documents available at**
  - <http://council.web.cern.ch/council/en/EuropeanStrategy/ESParticlePhysics.html>



- **First mid-term plan (MTP) after adoption of ESPP update**  
→ can be viewed as first steps towards implementation of new ESPP
  
- **Main features of MTP and corresponding budget (approved by Council):**
  - science and R&D programme mostly in line with ESPP, picking up 3 out of the 4 main priorities
    - Exception: neutrino physics
    - Caused strong comment from the SPC
  - consolidation of general infrastructure (buildings, ...) at CERN is a serious concern
    - Funding allocated well below the target of 55 MCHF/year (would need additional 300 MCHF over 10 years)
    - « Still in repair mode instead of preventive maintenance »
  - cumulative budget deficit for 2014 increased as compared to 2013
    - Caused much discussion in Council, with some countries not approving the MTP

# Roadmap to fully exploit the physics potential



- 1) Full exploitation of LHC physics potential (ESPP-c)
  - LHC Injectors Upgrade (LIU)
  - Performance Improving Consolidations (PIC-LHC)
  - R&D towards High Luminosity (HL-LHC)
  - **WARNING: MTP does not include funding for HL-LHC**
  
- 2) R&D for next CERN machine at high-energy frontier (ESPP-d)
  - R&D towards CLIC TDR
  - seed funding for various R&D studies:  
AWAKE, VHE-LHC (+TLEP), energy recovery linac
  - Roadmap for high-field magnets: HL → HE → VHE-LHC
  
- 3) European participation in possible ILC in Japan (ESPP-e)
  - common developments between ILC and CLIC + detector R&D

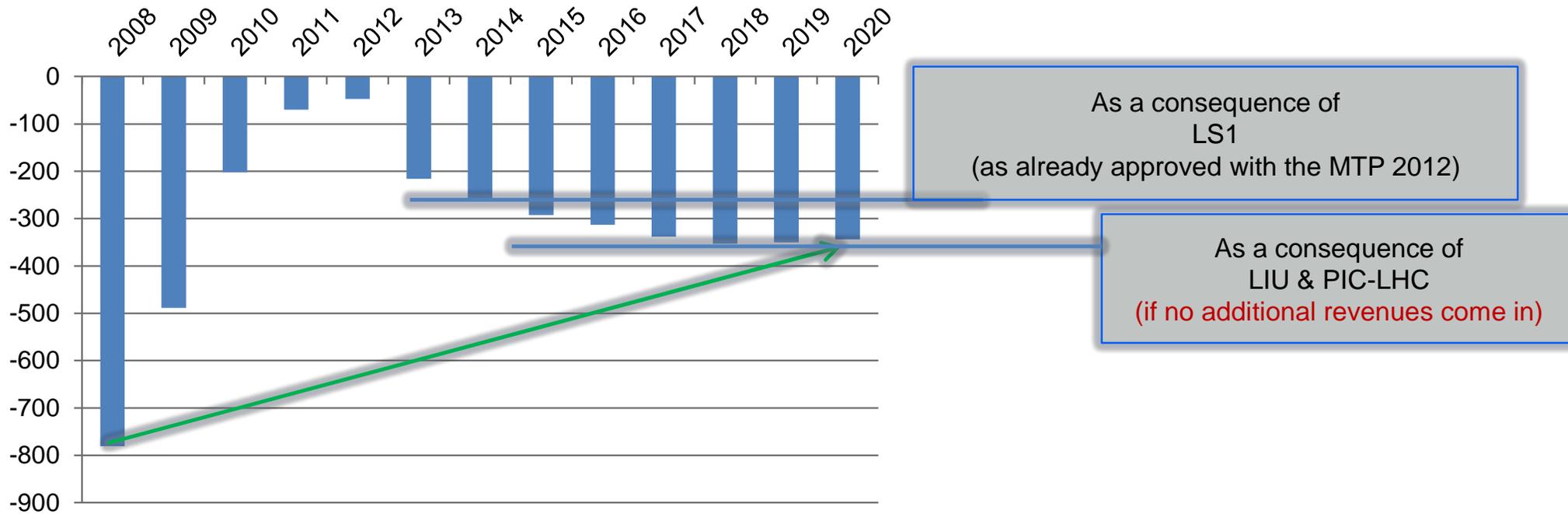
## ○ 4) Neutrino physics (ESPP-f)

- only modest seed funding for studies in neutrino physics at CERN
- « **SPC urges that a concrete plan for neutrino physics at CERN be defined asap, according to the EESP, at the level compatible with financial constraints and in cooperation with the European neutrino community, as well as the other worldwide laboratories active in neutrino physics** »
- **CERN management and SPC agree that this situation is due to lack of coherent plan from the European neutrino community**

## ○ 5) Approved non-LHC fixed target programme (ESPP-h)

- AD → ELENA (plus GBAR)
- nTOF → nTOF EAR2
- ISOLDE → HIE-ISOLDE
- + NA58 (Compass), NA61 (Shine), NA62 ( $K \rightarrow \pi \nu \nu$ ), CAST, OSQAR, CLOUD

# Cumulative Budget Deficit



As a consequence of LS1  
(as already approved with the MTP 2012)

As a consequence of LIU & PIC-LHC  
(if no additional revenues come in)

Reduction on average of 40 MCHF p.a. for the period 2008 to 2020 (about 3.5% of the annual budget)

- Switzerland should continue its strong support to CERN
  
- Top priorities:
  - Exploitation of LHC physics potential
    - strong CH involvement in ATLAS, CMS, LHCb, including upgrades
    - **CONCERN: funding of the upgrades**
      - **New FLARE funding scheme (2013–2016) not enough for particle physics, astroparticle physics and astrophysics**
  
  - R&D towards next high-energy machine at CERN
    - **CH should increase its contribution and visibility**
      - PSI, as national lab, should play central role
      - aim at second prof. position in accelerator science ?
      - ... and possible degree program ?

## □ Top priorities (cont.):

### —possible ILC in Japan

- so far, no declared interest from CH groups to participate in ILC physics
  - probably due to large effort on LHC experiments
- may change if project flies (?)

### —neutrino physics programme towards long-baseline project

- no clear path yet in Europe
- LAGUNA-LBNO listed as one of the priorities in CHIPP strategy for ground-based astroparticle physics
- **OPPORTUNITY and CHALLENGE:**
  - **Swiss groups should play an active role in the European process towards a visible contribution to the next long-baseline project**