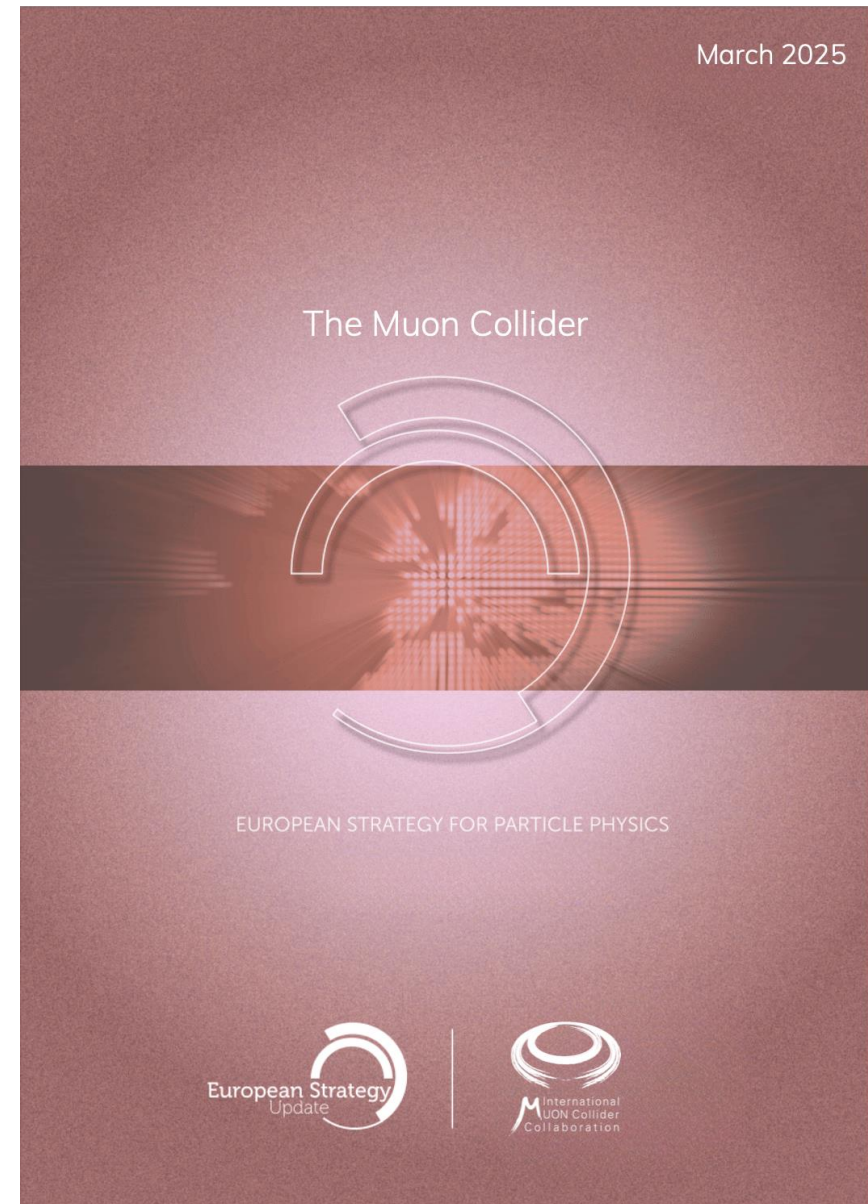


Status of ESPPU preparation

- One document is in preparation by the IMCC, describing achievements and status (evaluation) and a proposal for the next step (R&D). Main contributors so far are LB, SSF, BB, MS, FB, SM and BC



Evaluation

ESPPU Muon Collider Report – ACCELERATOR TECHNOLOGIES – February 4, 2025

2399 **Chapter 6**

2400 **Accelerator Technologies**

2401 **6.1 Magnets**

2402 L. BOTTURA, F. BOATTINI, B. BORDINI, M. BRESCHI, B. CAIFFI, S. FABBRI, S. MARIOTTO, A.
2403 PORTONE, M. STATERA, IMPORTANT NOTE: *TO BE COMPLETED AFTER DISCUSSION AT THE
2404 MMWG*

Extensive description of work (over 40 pages), still being polished and reviewed. The document is uploaded in the indico page of this meeting

IMPORTANT: review authorship, please announce yourself to LB and SSF

Magnet R&D for the Muon Collider

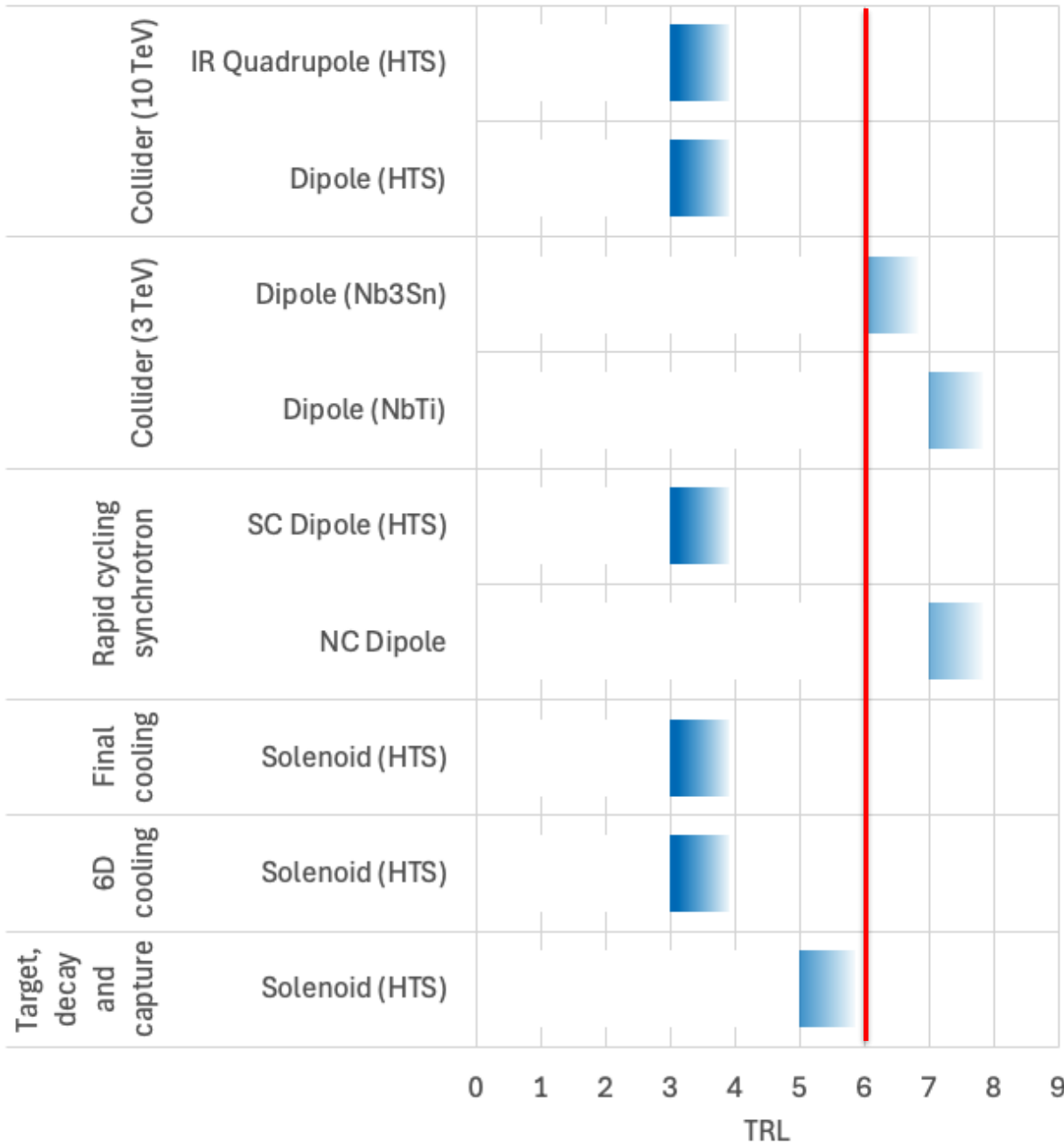
- A stand-alone document is in preparation, for independent submission to the ESPPU. Why a separate document ? (mail to F. Meloni, Ch. Rogers, D. Schulte, 5/2/2025)

“The pathway we have identified is challenging and broad, with many implications that are vital for the muon collider, but not only.”

As from the full document, working on these magnet technologies we have the potential to impact many other fields of science and societal applications, and I think this deserves a special place in the discussion, possibly even a special discussion in Venice.

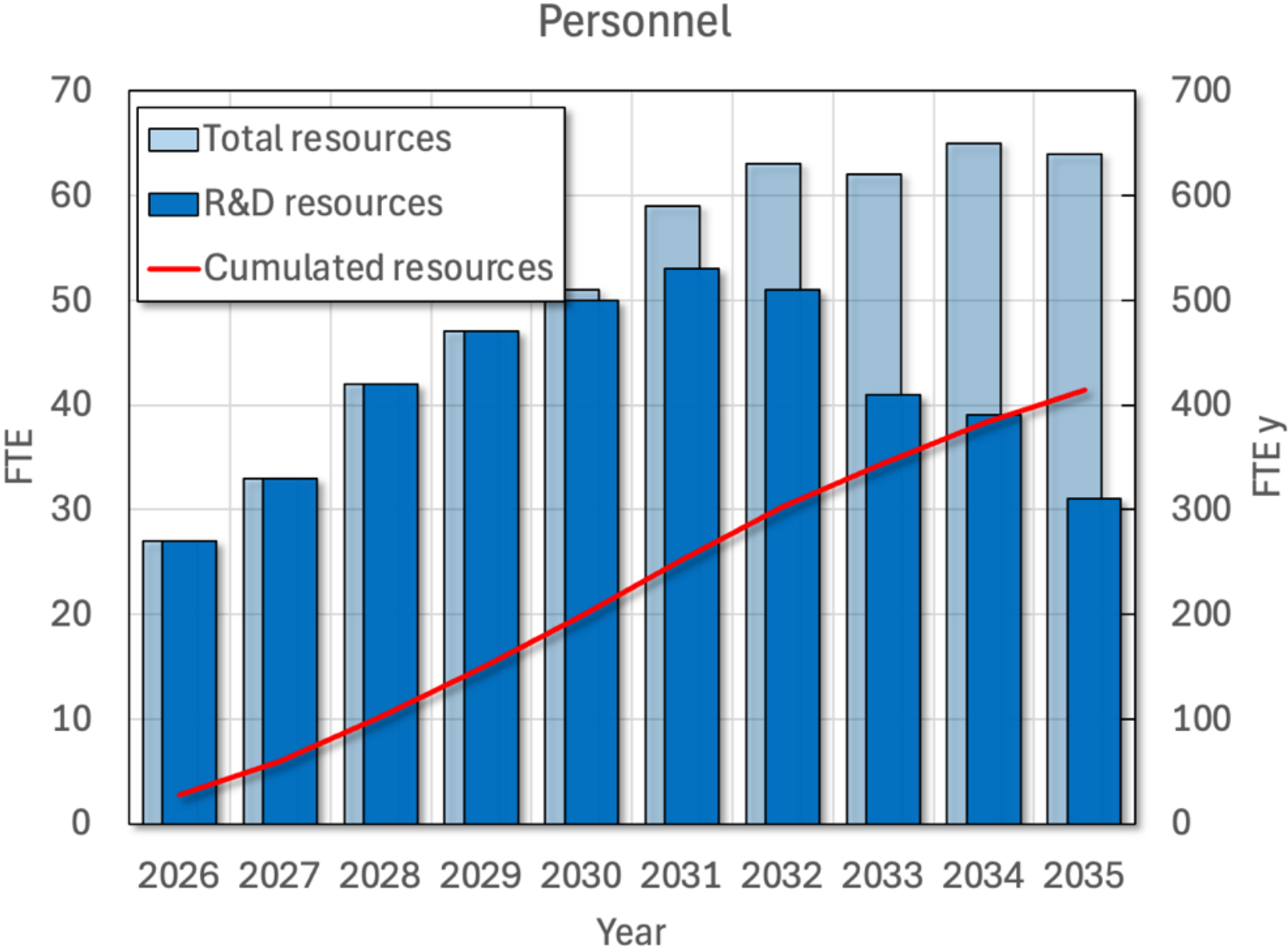
- Part of the full R&D narrative and proposal is obviously also entering in the Muon Collider ESPPU document

TRL driven R&D



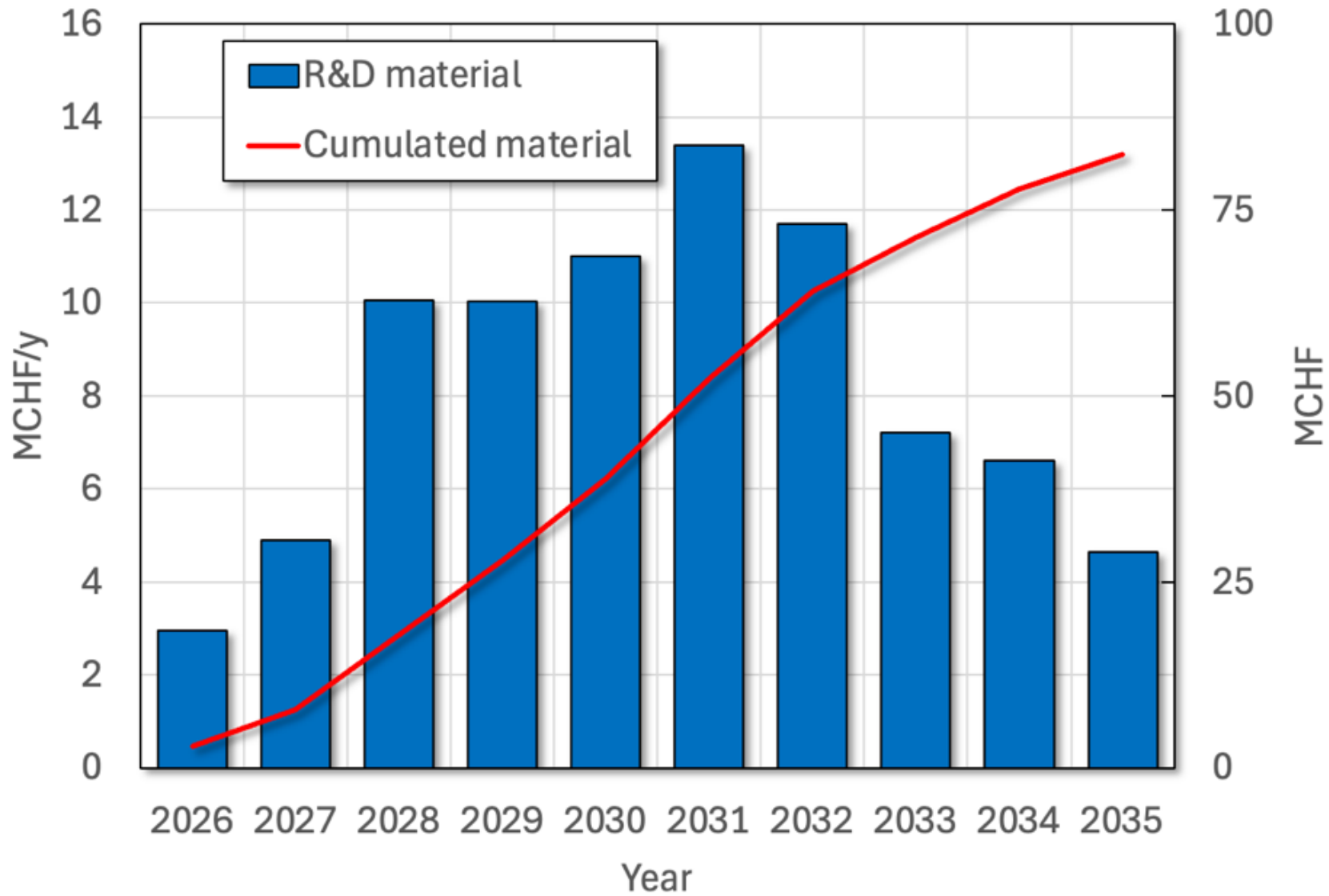
We wish to reach a TRL 6 for decision

R&D personnel resources

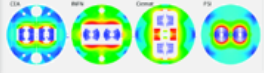




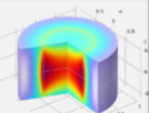


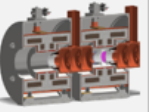


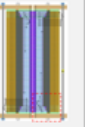



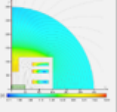

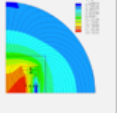




R&D material

Material



R&D impact

	HEP and NP 	High-field science 	NMR 	MRI	Fusion 	Motors/generators 
TM1 20@20 		High field, low consumption			High-field, large bore and large stored energy	
TM2 SOLID 		High field, low consumption		High-field large bore, cryo-free technology		
TM3 UHF-DEMO 	FCC-ee, CLIC (e+ source)	Ultra-high-field	Ultra-high-field			High-field, compact windings
TM4 RCS-String		High pulsed power and energy recovery			High pulsed power and energy recovery	
TM5 MBHY	FCC-hh, SppC					
TM6 MBHTS 	FCC-hh, SppC					3D, compact pole winding
TM7 MBHTSY 	FCC-hh, SppC					3D, compact pole winding
TM8 MQHTSY	FCC-hh, SppC					3D, compact pole winding

Questions and actions

- Read evaluation part, declare authorship. The document is uploaded on the indico site
- More on R&D in our next meeting (discussion on the detailed R&D items and potential participation). Present tables of resources are uploaded on the indico site