Federal Ministry
for Economic Affairs
and Energy

Ministry of Economic Affairs
and Employment of Finland

Republic of Estonia
Ministry of Economic Affairs
and Communications

Biotechnologies IPCEI candidates

Bio-based chemicals
Bio-based materials
Biotechnologies for food and feed

JEF-IPCEI Technical Level Meeting 4 March 2026

Biotechnologies IPCEI candidates: Objectives and policy rationale

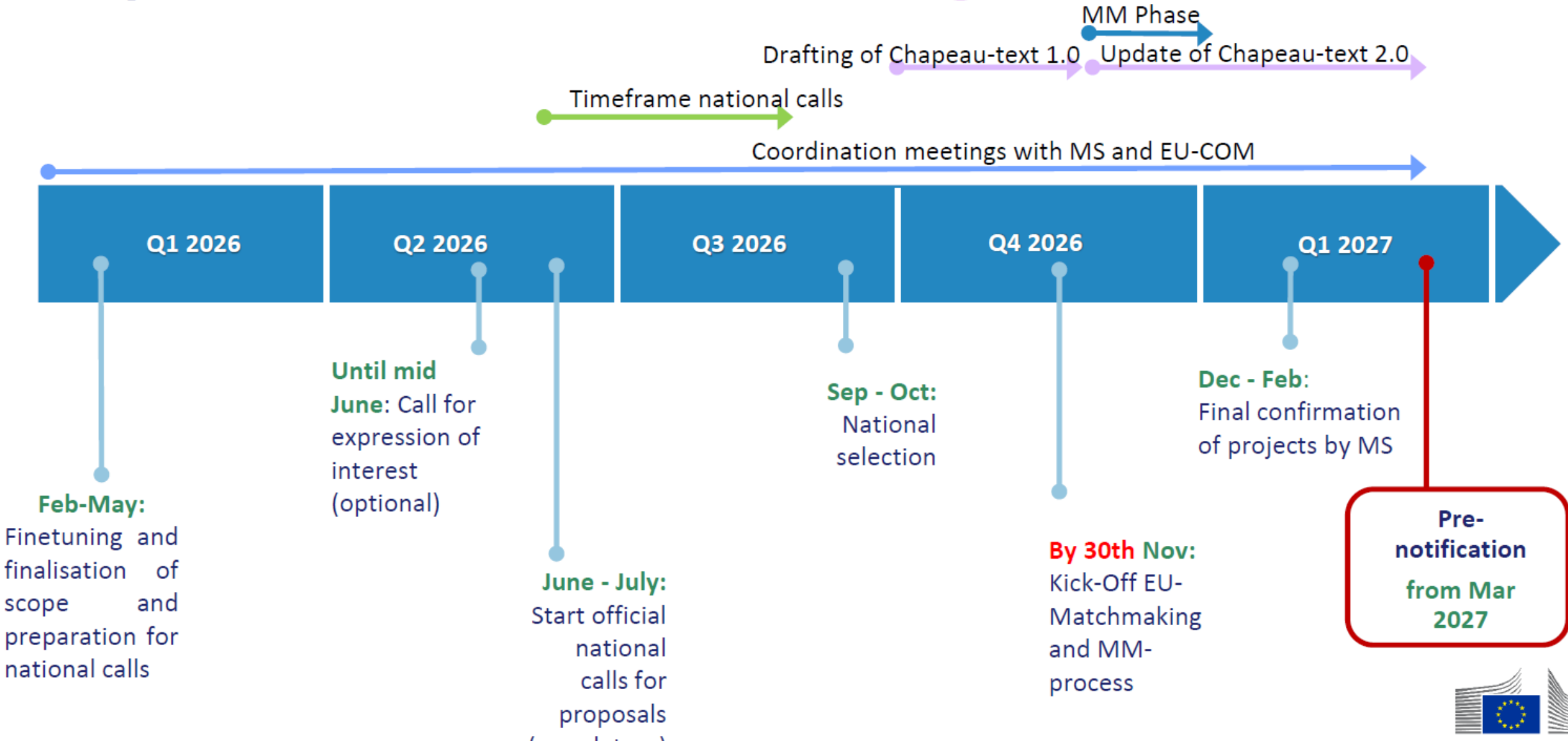
- Higher costs and higher risks for biotech compared to fossil based despite positive effects for defossilisation, CO_2-reduction, waste valorisation etc.
- Among barriers hindering the industrial deployment, high capital intensity, long return periods, and significant technical risk dominant => de-risking needed.
- No single MS can independently establish the critical mass of assets, knowledge and investment needed to realize upscaling and first industrial deployment.
- All biotechnologies IPCEI candidates contribute directly to the European Green Deal and the EU Climate Law, support EU's 2030 target of reducing greenhouse gas emissions by at least 55% and the 2050 objective of climate neutrality and are fully aligned with the Circular Economy Action Plan.
- All biotechnologies IPCEI candidates are technology and feedstock neutral.
- Focus is upscaling (first industrial deployment), but RDI is not excluded.
- Cross-sectoral value-chains: textile, forestry, packaging, cosmetics, agriculture, food, feed and chemical industries.
- Fragmentation of facilities and value chains leads to coordination failure.
- Biotech competes against fully developed fossil-based value-chains.
- Address strategic dependencies on non-EU suppliers of raw materials and technologies.

Organisation and Planning

- Participating Member States
  - Coordinators are DE (chemicals), FI (materials) and EE (food & feed)
  - BE, ES, FR, HU, IE, IT, MT, NL, PL, SI: active members
  - DK, PT: observers
- Synchronised coordination and planning of all three biotechnologies IPCEI candidates until further notice

Timeline:

Important milestones biotechnologies IPCEI candidates



IPCEI candidate for bio-based chemicals (BBC)

Coordinator: Germany

Participating Member States: BE, EE, ES, FI, FR, IT, MT, NL, PL, SI

Scope and Relevance

- IPCEI BBC focuses on basic chemical molecules that are building blocks for many chemical processes
- Aim: production of equivalent chemicals without fossil fuels, that can:
  - Be integrated into existing industrial processes
  - Enable novel, more sustainable processes

Application sectors

- BBC will feed into strategic downstream sectors (e.g. plastics and polymers, (fine) chemicals, agrochemicals, industrial solvents,…)
- BBC are precursors to the production of materials, used in a variety of industries.

IPCEI Candidate for bio-based chemicals (BBC)

- IPCEI BBC decarbonises chemical building blocks by shifting from fossil to renewable carbon through innovative biotechnological and process technologies
- Supports development and first industrial deployment (FID) of biotechnological processes for large-scale production of bio-based chemicals, bridging the gap from pilot to industrial scale

Market rationale:

- market uptake of bio-based chemicals remains limited despite technological progress
- environmental and societal benefits of bio-based chemicals are hardly monetized
- fragmented facilities and value chains cause coordination failures in the sectors involved
- bio-based solutions enter the market too late, while negative impacts of fossil value chains persist

IPCEI candidate for bio-based materials

Coordinator: Finland

Participating Member States: BE, DE, EE, ES, FR, HU, IE, MT, NL, PL, SI

Scope of the IPCEI:

- **Bio-based materials** are materials wholly or partly derived from renewable biological resources and produced through the valorisation of biomass, bio-based waste, recycled raw materials, or biogenic CO_2 into high value-added materials for use across multiple sectors.

- **Output products** are high value-added biobased materials used in sectors such as construction, packaging, textiles, cosmetics, bioplastics, and novel forest-based products.

- **Process** refers to the integrated development and scale-up of sustainable feedstock sourcing, chemical and biochemical conversion technologies, advanced material production, and effective recycling systems to transform biobased feedstocks into high value-added materials.