For more background and guidance about the EFFRA consultation WP26-27 and its modalities, please see https://www.effra.eu/consultation-made-in-europe-wp-26-27/

Please note that the content below does not reflect future call topics.   These items are reflecting potential research priorities with the aim of triggering feedback on which research and innovation priorities need to be addressed by the work programme 26-27.

- **2026-01: Industrial metrics of resilience and impact of decision-making on sustainability and competitiveness**

  - Decision making at value network level   -

  - Metrics of Resilience and the relation between sustainability, competitiveness and Resilience

  - Utilize AI and dataspaces for transparent and resilient supply chains, for transparent and resilient supply chains including applications such as digitally enabled certification.

  - Product traceability

- **2026-02: Smart data-driven intralogistics, factory and process automation**

  - Robots fleet management and control. Controlling complexity in cognitive cooperating machines.

  - Deployment of AI and digital twins for factory and process automation and optimisation of operational efficiency

  - Metrics of productivity.

- **2026-03: Advanced manufacturing for critical machinery components**

  - Manufacturing capabilities for machinery components that are critical for European strategic autonomy and resilience

- **2026-04 : Energy optimisation in discrete manufacturing**

  - Intelligent energy management systems

  - Local energy networks.

- **2026-05: Manufacturing for circular compliance**

  - Anticipate ambitious (and harmonised) legal requirements and associated standards (including circular by design supported by LCA)

  - High granularity and dynamic tracking of resource flows (high quality datasets). Address difficulties in integrating disparate data sources across product lifecycle due to their variable reliability, quality, frequency and associated technologies.

- **2027-01: Process optimization and servitisation for measurable impact on operational efficiency and productivity**

  - Productivity improvements through OEE. A Deep Learning Models for Predictive Maintenance.

  - Digital updating and upgrading of manufacturing assets. Speeding up while innovating (robust and Adaptive learning and control).

  - Create interconnected systems that provide real-time data analytics, enabling proactive and reactive decision-making to optimize production lines and supply chains

- **2027-02: New frameworks for natural and intelligent Human Machine Collaboration in manufacturing**

  - Standardized modules for Human-Digital Twin

  - Power balancing between stakeholders. How does the work change with different levels of autonomy?

  - Human-AI Co-Learning, Human-AI teamwork

  - Natural interaction models, methodologies for continuous training and the adaptation of workers to new technological environments. Digital enabled traceability/certification of workforce development to support re-qualification.

- **2027-03 : Upscaling innovative manufacturing processes for advanced products**

  - Polymer composites manufacturing with a higher use of recycled / revalorised materials (e.g. from byproducts).

  - Lattice structures and Functionally Graded Materials (FGMs)

  - Manufacturing of components with Ultra-Light light weight metal alloys

  - Advanced Joining processes for multimaterials

  - Printed electronics - Integration of electronics into molded parts

  - Collaborative and interconnected cross-disciplinary models

- **2027-04: Upscaling the manufacturing of products composed of secondary materials**
    - Managing the differences in quality and composition in raw materials (also associated to recycled materials)
    - Material Transition: Usage of Biocompatible/ recycled materials /biomaterials/biocomposites
    - Valorization of industrial waste and by-products as a solution to raw material shortages

- **2027-05: Lighthouses for (cross) Sectorial transformation pathways towards circular economy**
    - Sector-Wide Change: Achieve change through large-scale use cases supported by entire sectors (and across sectors).