

Recommendations for the Horizon Europe Strategic Plan 2025-2027

Executive summary

Orgalim represents Europe's technology industries, which include many of Europe's most successful and most innovative companies. This paper outlines Orgalim's recommendations for the upcoming Horizon Europe Strategic Plan 2025-2027. Orgalim:

- Recommends **advanced manufacturing, digitalisation and clean technologies** to be cross-cutting priorities of the next strategic plan.
- Stresses the need for increased funding for Europe's twin digital and green transitions in all areas of Horizon Europe and specifically in **clusters 4 and 5**, focusing upcoming calls for proposals on:
 - Miniaturisation, lightweight design and functional integration
 - Improving production processes (including for sustainability purposes)
 - Hybrid production systems
 - Data analytics, machine learning and industrial artificial intelligence (AI)
 - New engineering, designs, development methods and tools
 - New business logistics and business ecosystem engineering
 - Energy efficiency and power supply in manufacturing
 - Climate-neutral manufacturing
- Orgalim recommends making advanced manufacturing a strategic objective of Horizon Europe in line with the upcoming conclusions of the Industrial Forum¹ and as advised by leading industrialists².
- Recommends an increased role and funding for industry-driven initiatives and cooperations such as **Public-Private Partnerships (PPPs)**. For example: Made in Europe and the SNS JU.
- Welcomes the European Commission's ongoing efforts to expand the list of associated countries within Horizon Europe and strongly recommends making further efforts to involve the **UK and Switzerland**.

1. Focus areas to achieve a positive impact on Europe's economy and society

1.1. Advanced manufacturing and digitalisation

- **Orgalim recommends focusing on advanced manufacturing as a strategic objective of Horizon Europe in line with the upcoming conclusions of the Industrial Forum¹ and as advised by leading industrialists².**

The transition to advanced manufacturing will be crucial for every sector across Europe's industrial base. At its heart is the convergence and integration of technologies such as automation, robotics, and digitally connected solutions on the manufacturing shopfloor. This enables new production processes ('Industry 4.0' or 'Smart Factories'), as well as new types of products and materials. Using the vast amounts of industrial data generated in these processes, manufacturers can make products and services with higher added value and develop entirely new business models. Companies and economies which complete this transformation first will have a competitive edge for decades to come.

1.2. Clean technologies

There is an urgent need to turn the challenge of the net zero industrial transformation into opportunities and make our society and economies more resource-efficient and circular – and hence to contribute proactively to the UN Sustainable Development Goals. Europe can still claim global technology leadership and drive new solutions and new businesses towards a more sustainable economy.

It is crucial that the definition of clean tech is not too narrow – essentially involving renewables and a few related energy technologies like hydrogen and storage. While these are of course vital, such a narrow scope does not represent the radical industrial transformation required. The EU will not achieve net zero by 2050 if it only relies on replacing fossil energy with renewables. A far bigger focus is needed on energy efficiency, electrification and advanced manufacturing technologies, which allow industry to massively reduce the use of energy and resources and to unlock deep operational efficiency and productivity gains: doing more with less. Uptake of technologies already available will play a fundamental role, but R&D still has a big part to play. Cutting-edge technologies and new business models, including data-driven ones, are essential to achieving these goals.

2. Funding priorities

- **Orgalim recommends increased funding for Europe's twin digital and green transitions in all parts of Horizon Europe and specifically in clusters 4 and 5.**

Strategically, support for advanced manufacturing, digitalisation and clean technologies should be spread across several pillars and clusters of the Horizon Europe programme. However, clusters 4 and 5 in pillar 2 are specifically suited to faster advancement in these areas. There we recommend increased funding, focusing the upcoming call for proposals on the topics listed below.

¹ [Industrial policy dialogue and expert advice \(europa.eu\)](https://europa.eu)

² [Advanced Manufacturing: Seizing Europe's opportunity to lead the global manufacturing transformation | Orgalim](#)

2.1 Miniaturisation, lightweight design and functional integration

In order to efficiently address the major European challenges and to further enable technological progress in a wide range of applications, components and products must become still smaller; for example, sensors and micro-mechanical and electronic systems, low-energy components, or bio-hybrid components. Functions must be integrated in surfaces and in concentrated spaces. Products can become smaller, lighter, more robust and more energy efficient.

2.2 Improving production processes

Advanced production processes (e.g. additive manufacturing, bio-based, bio-inspired processes, and circular economy production) are needed to open innovation paths for new solutions and products, whilst ensuring scalability, affordability and reliability. Advances and industrial breakthroughs in production technologies such as laser-based production, additive technologies, nano- and micro-production, machine vision/inspection, AI/machine learning, robotics and automation will play an essential role as enablers for more climate-friendly production, together with sustainable product design which will lead to better production processes, including “circularity by design” approaches.

2.3 Hybrid production systems: agility, resilience, adaptivity

Personalised products and customer expectations, changing markets, competitive pressure and the need to increase resilience require adaptability and speed. This requires the permanent adaptation of the entire value chain. Hybrid (cyber-physical) production systems can be configured to adapt in relation to the demands of manufacturing load and decisions to optimise. A factory can be described as a complex, long-life and highly integrated system, which operates in the “room of parameters” for best performance and zero defects. Priorities in this area are reconfigurability, modularity, remote operations supported by cloud or edge computing and resilience through adaptive use of available resources.

2.4 Data analytics, machine learning and industrial AI in manufacturing enterprises

Data analytics and the more sophisticated methods of machine learning and AI in industrial value systems promise huge potential in terms of competitiveness and sustainability. With increasing levels of autonomy in decision-making, data processing systems will have to meet the highest standards with regard to safety, reliability, quality and transparency. Research for data analytics in industry must be geared towards concrete applications in markets and value networks and requires high levels of interdisciplinarity and close collaboration between industry and research institutes/universities.

2.5 New engineering, design and development methods and tools

In order to increase productivity and address sustainability, European companies will have to excel in their capacity for problem-solving. While excellence in production is still essential, differentiation will depend on how innovation, partnerships and ecosystems are led and orchestrated. Therefore, the availability of skilled innovators such as engineers, designers, scientists, and entrepreneurs must be ensured. The level of integration of the human into digital working infrastructure will grow in the near future and this is why the workforce must be upskilled or reskilled in advance to facilitate, and to be a protagonist, of this change.

Furthermore, improved funding systems are needed to overcome the gap from prototype to a commercial product. Without a funding strategy or increased venture capital possibilities, innovation cannot succeed.

2.6 New business logics and business ecosystem engineering

To bring new, value-added solutions to the market in today's complex, global business environment, horizontal and vertical cooperation in value networks is critical. This requires new ways of thinking – new business logics – to transform challenges and new technologies into business opportunities. For example, it is important to investigate the technical, legal and organisational aspects of business ecosystems and to develop systems for their description and design. Digital platforms create more efficient and, ideally, more transparent markets. They offer companies new ways to cooperate with customers and industry partners. In particular, small and medium-sized companies benefit from improved global visibility for their own company and possible cooperation partners in the market. Furthermore, products will evolve (by software developments for example) during their entire life cycle. This will enable new business models, adaption of functionalities and efficiencies, but will also create new challenges in terms of digital/physical integration, data handling and engineering processes.

2.7 Energy efficiency and power supply in manufacturing

We recommend continuing the development and deployment of solutions where machines and factories can, amongst other things, master the increasing complexity of flexible and distributed power generation and the enabling and accelerating role that digitalisation can also play in this area. In the manufacturing process itself, energy efficiency, renewable energy generation, energy storage and energy harvesting/recovery can also contribute to reducing energy consumption and accelerate the transition towards a climate-neutral economy.

3. How to get there:

3.1 Focus on Public-Private Partnerships (PPPs)

- Orgalim recommends an increased role and funding for industry-driven initiatives and cooperations such as the PPPs.
- Orgalim recommends establishing a dialogue with industry to identify potential areas for industrial cooperation and partnerships.

Collaboration in European Research and Innovation (R&I) communities and between industry and policymakers such as the PPPs is an efficient way to strengthen Europe's innovation capacity and global competitiveness that simultaneously meets the major societal challenges we face. So far, PPPs such as Made in Europe and the Smart Networks and Services Joint Undertaking³ have been successful for both sides. They have enabled a fruitful strategic policy dialogue, served as a low-barrier gateway to EU research for SMEs and have proved to be a very efficient method for knowledge- and technology-transfer to a wide range of enterprises. We recommend expanding them to reap the full benefits of the PPP model.

3.2 A success story: Made in Europe⁴

Significant increases in public and private investment will be needed for Europe to deploy advanced manufacturing technologies at scale. Europe lags behind in terms of public funding for R&I and the deployment of advanced manufacturing technologies in the market.

³ [The Smart Networks and Services Joint Undertaking | Shaping Europe's digital future \(europa.eu\)](#)

⁴ [Made in Europe - State of Play | EFFRA](#)

Made in Europe is playing a crucial role to inspire these solutions and to create the related technological building blocks. Firstly, it is bringing together manufacturing researchers and industry experts from the EU in a unique way, enabling collaboration and innovation. And secondly, Made in Europe has identified the innovation needs of industry, for example in areas such as the circular economy and agile manufacturing, and combined these in a Strategic Research and Innovation Agenda (SRIA). These industrial research priorities are still valid – however, three developments have become even more relevant and require more attention:

1. **Energy efficiency**, coping with scarcity and the increasing urgency to reduce greenhouse gas emissions have become even more important priorities for industry.
2. **Focus on productivity and efficiency is needed**, because of an economic situation which is becoming increasingly more difficult. In particular, the specific objective ‘human-centred and human-driven manufacturing innovation’ should be oriented more clearly towards measurable advances in productivity.
3. The **exchange of data and the manufacturing data spaces** will be one of the most important drivers for progress in manufacturing. Even if the related calls for proposals are taking place within the Digital Europe programme, activities should be closely coordinated with the Horizon Europe programme in general and with Made in Europe in particular. Such projects are all the more important in light of the significant changes expected in the data economy landscape due to the Data Act and the Data Governance Act.

3.3 European R&D needs international cooperation

- Orgalim welcomes the Commission’s ongoing efforts to expand the list of associated countries to Horizon Europe and strongly recommends making further efforts to involve the UK and Switzerland.

Programmes and funding instruments such as Horizon Europe, Digital Europe programme, innovation funds and the Connecting Europe Facility play an essential role in achieving the green transition and maintaining the competitiveness of European companies. However, it should not be forgotten that research excellence is the result of cooperation between the best brains across borders and that the EU alone will not be able to fully meet the technological challenges which lie ahead. The EU’s RDI environment must be “open by default” and based on fundamental values (e.g. research ethics, gender equality, and evidence-based policymaking) while at the same time ensuring reciprocity and a level playing field for international cooperation.

Orgalim represents Europe’s technology industries, comprised of 770,000 innovative companies spanning the mechanical engineering, electrical engineering, electronics, ICT and metal technology branches. Together they represent the EU’s largest manufacturing sector, generating annual turnover of €2,497 billion, manufacturing one-third of all European exports and providing 10.97 million direct jobs. Orgalim is registered under the European Union Transparency Register – ID number: 20210641335-88.



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