Brussels, 11 December 2024

Orgalim key recommendations on Research, Development & Innovation

Executive Summary

Europe's RD&I policy should aim to significantly boost its competitiveness in the global R&D landscape. Orgalim advocates for **doubling the budget of the upcoming EU Research and Innovation Framework Programme (FP10) to €200 billion** to match the rising R&D investments of the US and China. Despite robust R&D spending by European industries, the EU's share of global industry output has declined. FP10 must prioritise attracting industry-driven R&D investments by providing long-term funding stability, predictability, and support for both large companies and SMEs. FP10 must include a **strong, dedicated scheme for technological leadership** – which is needed both for economic growth and the transition towards a net-zero and circular industry. **Research projects need to align with industry needs to be relevant and to be eventually taken up in value chains.** To ensure this, industry must be involved in strategies, roadmaps, and priority definition This will help bridge the gap between research and commercialisation, ensuring innovations reach European markets effectively.

An urgent priority must be to **streamline project application processes, reduce administrative bottlenecks, and adopt flexible funding structures.** Simplifying access for businesses, especially SMEs, will encourage broader participation and innovation across different technology readiness levels.

Public-Private Partnerships (PPPs) should be strengthened by giving companies a leading role in setting agendas. If we better align research projects with industry needs, their impact on European competitiveness will be maximised. The R&I framework should **prioritise excellence-based project selection**, leveraging objective criteria to ensure high-quality outcomes. This focus on research excellence will enhance the EU's ability to compete globally and support long-term, impactful innovation.

Orgalim supports the European Commission's efforts to **enhance technology infrastructures that bridge R&D policy with industrial policy**, enabling efficient testing, validation, and scaling of new technologies. This is crucial for advancing the green and digital transitions across Europe.

The EU should adopt a **balanced approach to research security.** The "open where possible, closed where necessary" principle will safeguard technological advances and investments. Measures must be pragmatic, not lead to a further bureaucratic burden, and should be limited to clearly defined technological areas which are considered critical. **Technical standards play a critical role in translating research into market-ready innovations**. The EU should enhance support for companies participating in international standardisation bodies, which will facilitate the adoption of European technologies globally.

Orgalim recommends **strengthening collaborations with Switzerland, the UK, and other trusted international partners** to drive research excellence and innovation. This inclusive approach will help the EU address global technological challenges and achieve its green transition goals.

Overall, the EU's R&I should aim to stimulate a dynamic and interconnected R&D ecosystem that supports the entire research cycle: basic research, applied research, and innovation. By effectively addressing industry needs and technology leadership objectives, reducing administrative barriers and focusing on excellence, the EU will strengthen its global position in research and innovation.

Introduction

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 over €2,819 billion, manufacturing one third of all European exports and providing 11.9 million direct jobs. Our industries are global leaders in the carbon-neutral energy, electrification, alternative fuels and clean manufacturing technologies needed to achieve net-zero. We are committed to playing our part to deliver the net-zero transformation and the green transition.

The Orgalim policy agenda for a European high-tech manufacturing base identifies six key areas policymakers should prioritise during the 2024-2029 legislative cycle in order to unleash Europe's high-tech manufacturing potential and make our net-zero future a reality:

- Decrease the regulatory burden
- Regain global leadership in research and innovation
- Recommit to the single market
- Make digital legislation work for manufacturing industries
- Remove trade barriers
- Ensure a competitive and secure energy supply

In this document, Orgalim sets out its **key recommendations on R&D and Innovation for the upcoming EU legislative period.**

The future EU Research and Innovation policy will have a deep and long-lasting impact on Europe's competitiveness and technological leadership. To build a strong future for our society and our economy, **we need to make Europe the most attractive place for Research, Development and Innovation (RD&I), where new leading technologies are created, and investments are made.**

Technological progress is not only key to economic growth and development but is a geopolitical factor: mastering essential future technologies will be crucial for controlling strategic nodes and creating mutual strategic dependencies within international value chains. In essence, an integrated research, innovation, and industrial policy is required if Europe's future is to remain in our own hands.

Recommendations

An ambitious EU Research and Innovation Framework Programme based on industry needs

In 2025, the European Commission will adopt a proposal for the next European Research and Innovation framework programme ("FP10") for the period 2028-2034. **Orgalim calls on the EU to at least double the budget for FP10 to €200 billion** taking into account expansion of applied research activities under Pillar 2. This is to stimulate Europe's competitiveness and keep pace with increased R&D investments by the US and China. Over the past 20 years, the EU has not caught up in the international competition for the best conditions for research and innovation, but has instead fallen further behind. Data shows a decrease in R&D expenditure as a percentage of GDP from 2.27% in 2021 to 2.22% in 2022, while the commitment is 3%. Furthermore, Europe's share of global industry gross value added declined from almost 25%

in 2000 to 16.3% in 2020[1], while industry is the accelerator of R&D in modern economies. The US is traditionally a bigger R&D spender and China recently surpassed the EU in R&D spending [2].

The EU must design the next Framework Programme with the clear intention of stimulating industry to make their R&D investments in Europe. Global competition for R&D investments from industry is exceptionally fierce, with numerous regions employing aggressive strategies to persuade companies to establish R&D operations within their borders. To ensure that research-intensive companies stay and develop their technologies in Europe, our **research funding system must offer adequate funding, predictability and long-term stability.**

European companies have demonstrated robust growth in R&D investments despite economic uncertainties and continue to account for 66% of EU R&D spending, totalling €233 billion in 2022[3]. Therefore, **the fact that industry is the main driver of R&D and innovation must be recognised and taken into account in the design and programme of FP10**. It is essential for FP10 to continue supporting the involvement of large companies, leveraging their strengths from years of private investment in the European innovation ecosystem. At the same time, FP10 should provide a range of funding options for SMEs and start-ups, offering easy access to extra cash flow during and after projects. Additionally, it should ensure competitive and attractive funding rates for large enterprises through basic project funding.

As well as increasing the FP10 budget, the focus should be on increasing the participation of industry in FP10. With the current geopolitical situation and focus on competitiveness, industry-focused funding should increase to at least one third of the budget to achieve Europe's technological leadership ambitions. Technology should not only be researched, but also developed, produced and scaled up in Europe. Innovative technologies must find more acceptance and be integrated into the daily lives of European citizens. For this to happen, **Orgalim pleads for FP10 to better consider industry needs.** Research projects must align with industry needs to be relevant and to be eventually taken up in value chains. To ensure this, industry must be involved in strategies, roadmaps, and priority definition.

Orgalim **welcomes the recommendations of the high-level independent experts group report[4] to design a stronger, well-funded framework programme able to boost Europe's global competitiveness**. In particular, we support the actions to enhance industrial research and innovation investment by creating an Industrial Competitiveness and Technology Council and the call for radical simplification of the application processes to reduce the heavy administrative burden and encourage companies' participation in R&I collaborative projects.

Competitiveness and technological leadership at the centre of EU Research and Innovation (R&I) policy

The industrial perspective is relevant throughout the research cycle because industry requires the results and knowledge from basic research as well as support for innovation. For the technology industries, however, applied, collaborative research is a truly essential part of European research programmes. Here, manufacturers, SMEs, research institutes and universities collaborate across borders on a pre-competitive level, developing the solutions needed for sustainability and competitiveness.

Therefore, **the next Framework Programme must include a strong, dedicated scheme for technological leadership – which is needed both for economic growth and the transition towards a net-zero and circular industry.** It must give appropriate weight to the industrial technologies which determine the competitiveness and sustainability of European industries, such as AI-enhanced manufacturing design, processes and services (e.g. the Industrial Metaverse), advanced

[1] ERT, European Competitiveness and Industry Benchmarking report 2022

[2] Science Business, EU R&D intensity falls in 2022 – despite increased spending, 7 December 2023

[3] Eurostat, EU expenditure on R&D reaches €352 billion in 2022, 1 December 2023

[4] European Commission: Directorate-General for Research and Innovation, *Align, act, accelerate – Research, technology and innovation to boost European competitiveness*, Publications Office of the European Union, 2024,

manufacturing technologies, robotics/autonomous systems, simulations and digital twins cybersecurity and advanced materials.

Research funding must focus on Europe´s strengths and on the technologies which are most promising from a competitiveness and sustainability point of view. This does not mean, however, that technological solutions should be prescribed in detail, or the choice of technologies set in stone. Innovation is by no means a linear process and technological change is not always strategic and smooth. The capability of an industry to innovate depends on its capacity to recognise a technological opportunity and to enact creative improvement where it is needed.

Research and innovation form a living ecosystem where the three pillars — basic research, applied research, and innovation — are interconnected and interdependent.

Pillar 2 funds collaborative R&D projects that generate new knowledge, technologies, and solutions addressing societal challenges. These projects create innovations, **proof of concept** or **prototypes** that require further development, testing, and scaling, which is where Pillar 3 comes in. Pillar 3 is crucial for taking these promising technologies and innovations to the next level by providing funding and support for **market entry** and **scaling**.

Pillar 2 contributes to the innovation pipeline, providing a steady flow of new ideas, technologies, and research results that can be harnessed by Pillar 3 initiatives**.** This creates a dynamic ecosystem where research outputs are continuously fed into innovation and commercialisation pathways.

Pillar 3 plays a crucial role for individual companies that may lack the capacity to participate in consortia under Pillar 2. The **European Innovation Council (EIC) has demonstrated its effectiveness** and deserves increased funding to support promising innovative companies, both scale-ups and larger enterprises. However, we believe Pillar 3 should be developed with a clearer focus on "shortening the time to market" to more effectively contribute to closing the innovation gap.

Attract companies and SMEs with a business-friendly R&I policy

To attract more companies to European R&I project initiatives, research programmes must be more business and SME-friendly. The Horizon Europe research programme is thematically very fragmented and detailed, creating a maze of information that even experts struggle to navigate. **FP10 must be defined along broader lines that leave flexibility for future needs and bottom-up innovation, having better, flexible absorption capacity for technological evolution**. **Several actions can be taken to lower barriers for businesses' and SMEs' participation** in research projects with all TRL levels, R&D and disruptive innovation projects. First, programmes must be transparent, with flexible call topics that do not restrict creativity, clear application time and payout deadlines. Second, we need streamlined application procedures with simplified processes for all types of companies as well as further flexibility in the choice of cooperation partners. Finally, industry stakeholders advocate for an efficient transfer of research results that gives all companies access to new knowledge.

R&D projects under Pillar 2 in the EU Research and Innovation Framework are of crucial importance for EU competitiveness and knowledge development. This is where long-term pre-competitive collaborative research between universities, research organisations and companies takes place. However, businesses' participation in those projects is declining. EU research policy needs to re-ignite the interest of innovative companies to co-lead scientific endeavours and help SMEs to mature by sharing project coordination know-how, market access and a diverse suppliers pool while providing insights into the international technology competitiveness landscape. Adapting procedures to the current requirements of agile and shortened R&D processes, for example through open, bottom-up, technology-neutral and accelerated calls for proposals, is a first step.

Reduce administrative bottlenecks and barriers

Administration and bureaucracy are undermining the EU's objective to be the most attractive R&D region globally. FP10 needs a bold revolution to focus on qualitative research output rather than project documentation and resource-intensive reporting.

Concretely, we advocate for:

- allowing for sufficient time between opening and closing a call for a project, as building a project proposal remains in many cases a complex exercise.
- proposal evaluations with a concise structure of diligent score justification together with clear components of shortcomings definition and suggested steps for improvement.
- the Commission to accept the usual time management measurements schemes and accounting practices that companies are commonly using in programmes at national level. The current system results in double workload as companies need to apply two different schemes and/or practices.
- more clarification on the lump-sum funding demands.

In general, the funding rules for R&I projects should be much more aligned. EU and national rules are in parts contradictory, which could lead to the loss of a significant share of funding;

Stronger role for companies in Public-Private Partnerships

Public-Private Partnerships (PPPs) bring together the Commission, industry, research organisations, and other stakeholders to tackle challenges in research and innovation through collaborative projects. **PPPs** under previous and current Framework Programmes (e.g. 2Zero, Made in Europe, CCAM) **have proved to be highly valuable and inclusive instruments and have successfully delivered innovative technologies and deployable solutions for the digital transformation and green transition.** The PPP approach needs to be further maintained and shaped in FP10, as partnerships are highly efficient and targeted instruments which appropriately combine the complementary strengths of the various involved stakeholders. However, we believe the number of PPPs should be reduced to avoid fragmentation of the programmes. In addition, partnerships should be better focused on industry needs to create value and contribute to Europe's competitiveness. To this end, companies should take a more significant role and be leaders when defining the partnerships agenda and choosing the cooperation partners, with a clear goal to bring research to market.

Prioritise excellence-based research

Over time, we have seen the principle of research excellence being compromised to accommodate other policy priorities. However, to stay inspiring and relevant, as well as to ensure added value for society and industry, the **EU's research funding must be based on excellence and a competitive selection of projects**, using objective criteria and the excellence principle. To ensure EU-wide balanced and expanded participation, resources from the Cohesion Funds could be used to increase the capabilities of EU regions to successfully compete in excellence-driven programmes.

In addition, the current EU Research Framework Programme 2021-2027 ("Horizon Europe") Missions[5] represent other policy priorities, which are not solely based on excellence. The Missions do not have an adequate R&I content – and they cannot be realised solely as R&I missions. The implementation of these Missions – which goes far beyond RD&I measures and needs more budget than any research framework can provide – should be organised outside of the EU Research Framework Programme.

Horizon Europe programmes and call topics are often overloaded with too prescriptive policy-related requirements. We must find a better balance, as this constrains the freedom of research and creates access barriers for SMEs and mid-sized companies. **The EU Research policy needs a long-term approach led by technological opportunities, societal and scientific goals, and based on excellence**. To this end, industry stakeholders must be actively involved to identify the next major challenges of the future, for example through technology platforms or Public-Private Partnerships.

[5] European Commission, EU Missions in Horizon Europe

Technology infrastructures – an important tool for reaching Europe's green and digital goals

Technology infrastructures are not only a research and innovation policy instrument. They are a true bridge between R&D policy and industrial policy. **A well-established technology infrastructure landscape at the European level can significantly support and facilitate industrial innovation and transition processes**, ensuring that new technologies, materials, and solutions move more efficiently from the laboratory to the market. Within these infrastructures, technologies and processes can be rigorously tested and validated, and new prototypes can be developed and scaled up for market entry. As industries shift towards increasingly sophisticated goods, services, and systems, testing environments become essential for rapidly identifying effective solutions.

The Commission's ongoing efforts to establish a unified approach to enhance the visibility, utilisation, and funding of technology infrastructures should be encouraged. A European policy for technology infrastructures that is aligned with industrial needs is required. Therefore, it is crucial to establish a future governance model that can capture industrial needs in a structured and agile way to make sure that the technology infrastructure landscape in Europe offers the right test environments, thereby supporting the long-term effects desired by the industry and the EU. In general, access to technology infrastructure at a European level should be provided where individual entities cannot create adequate testing environments on their own within reasonable means. **Technology Infrastructures at EU level should create value across a broad value chain, avoid limitations to specific products, processes, or users, promote collaboration, and maintain a business model capable of contributing to the long-term sustainability of the technology infrastructure.**

Research security in an open world

EU research and innovation projects must be open for cooperation with researchers and organisations from third countries to facilitate the exchange of research, inspiration and ideas. However, against the background of geopolitical tensions and fierce global competition, the risks of international collaboration, for example in terms of uncontrolled transfer of knowledge, must be managed.

It is therefore essential to strike a balance by applying the principle of "open where possible, closed where necessary". In times of increasing geopolitical global competition for technological leadership, investments in technological progress and research results must be protected and certain areas might require restrictions in terms of participation and dissemination. However, **research security measures must be pragmatic, not lead to a further bureaucratic burden and be limited to clearly defined technological areas which are considered critical**.

Moreover, a new approach is necessary for the most complex element of the open science paradigm. The business and innovation perspective has been missing when developing policies around open science in Horizon Europe, in particular with a view to the role of open data in the realm of geopolitics and the repercussions for the EU's economic competitiveness. Therefore, we request a change to the current simplistic dichotomy defining research data as "open vs. closed" in Research & Innovation Actions (RIA) and Innovation Actions (IA) funding and the development of guidance that ensures flexibility according to both the type of research project and research data considered – still building upon the "as open as possible, as closed as necessary" principle.

Promoting and protecting intellectual property rights and trade secrets

An adequate system of promotion and protection of R&D outcomes is an essential incentive to attract private funding for R&D activities and therefore to achieve ambitious R&D policy objectives.

It is important that robust intellectual property (IP) strategies go hand in hand with the overall innovation policy. IP policy should focus on strengthening the use and enforcement of IP rights while promoting IP awareness to ensure that innovative technologies are effectively protected and commercialised. Translating innovation into marketable and

protected products is a key issue and Europe is currently lagging behind other regions of the world in terms of patent applications. This approach will not only safeguard investments in research and innovation but also enhance Europe's competitiveness in the global market. According to the European Patent Office (EPO), in 2023 57% of the patent applications in Europe were submitted from companies originating in third countries[6]. In addition, special care must be taken when proposing legislation that impacts the protection of trade secrets, such as in the case of the recent Data Act regulation 2023/2854 or the future delegated acts on the Digital Product Passport under the Ecodesign for Sustainable Products regulation 2024/1781. Mandatory disclosure of trade secrets is a strong disincentive to investments in R&D and thorough impact assessments as well as competitiveness checks must be carried out before taking similar actions in the future.

Measures to increase IP literacy among companies and SMEs is vital, especially when it comes to new and welcome instruments such as the Unitary Patent System. Educating businesses and researchers on the significance of IP rights will empower them to leverage these tools for innovation and competitiveness, ultimately driving economic growth and technological leadership in Europe.

Bring innovation to market with standardisation

Technical standards are of the utmost importance for the competitiveness, technological leadership and supply chain security of the European economy.

With the help of standards, inventions become successful innovations on the market. Technical standards contribute to bridging the gap between research and market, increasing the probability of market uptake of technological innovations and paving the way for the large-scale deployment of new and strategic technologies. However, participation in international standardisation organisations requires resources that many companies, in particular SMEs, do not have.

In addition to technological competition, there is also competition between political systems. In this context, we can observe a rapid increase in both participation and dominance in international standardisation organisations, mainly heavily government-subsidised participants from competing countries.

Therefore, we fully support the Council conclusion from May 2024 which emphasises the importance of supporting greater participation of the EU business community in the development of standards at international level.

This can be done, for example, by **recognising standardisation as part of the innovation process and providing more support for companies who dedicate resources to international standardisation** organisations, both at EU and national levels.

Switzerland and the UK are full research partners of the EU

The ongoing efforts of the Commission to expand the list of countries associated with Horizon Europe are welcome. Orgalim strongly recommends making further efforts to involve the UK and Switzerland as close partners in research and innovation projects. At global level we support intensifying the path taken in international cooperation (Associated Countries to HEU) beyond Japan, New Zealand, Canada and South Korea with other relevant and trusted players in the green and digital transitions, such as South America, India, Mexico, UAE and the US.

Programmes and funding instruments such as Horizon Europe, but also the 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

[6] European Patent Office, "Innovation in digital and clean energy technologies boosts demand for patents in Europe in 2023", press release, 19 March 2024.

technological challenges which lie ahead. The EU's R&I 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.

Links to Orgalim publications

Orgalim Policy Agenda and key recommendations for the upcoming EU legislative period 2024-2029

- Orgalim Policy Agenda for a European high-tech manufacturing base for the 2024-2029 legislative cycle
- Orgalim key recommendations on the circular economy
- Orgalim key recommendations on the single market
- Orgalim key recommendations on digital policy
- Orgalim key recommendations on investments
- Orgalim key recommendations on energy and climate
- Orgalim key recommendations on European standardisation
- Orgalim key recommendations on trade policy

Orgalim position papers on research & development

- Orgalim position paper on the new **EU Research Framework Programme** (FP10), 24.04.2024
- Orgalim recommendations for the **Horizon Europe** Strategic Plan 2025-2027, 23.02.2023

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Orgalim aisbl
BluePoint Brussels
Boulevard A Reyers 80
B1030 | Brussels | Belgium

+32 2 206 68 83
secretariat@orgalim.eu
www.orgalim.eu
VAT BE 0414 341 438