



Aligning National and EU Strategic Priorities in Research and Innovation

Fernando Alexandre, Minister of Education, Science and Innovation

Portuguese Science Summit Innovation 2026, 16th July

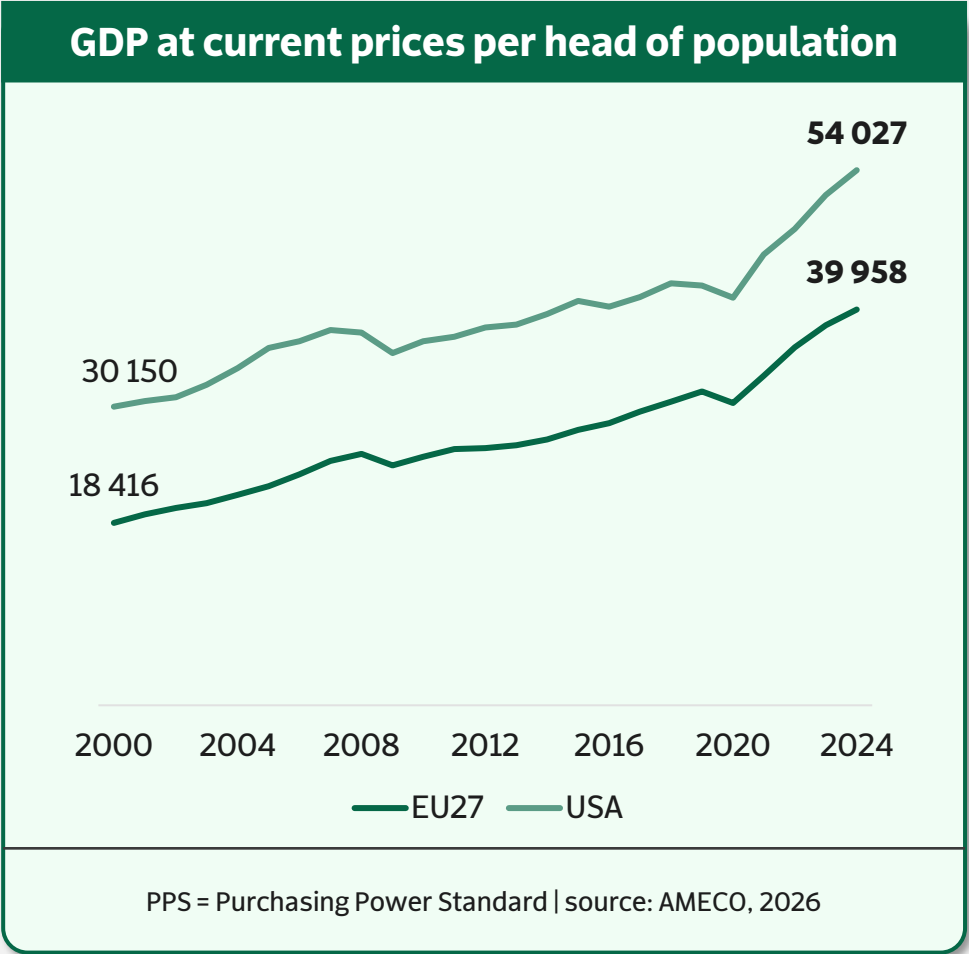


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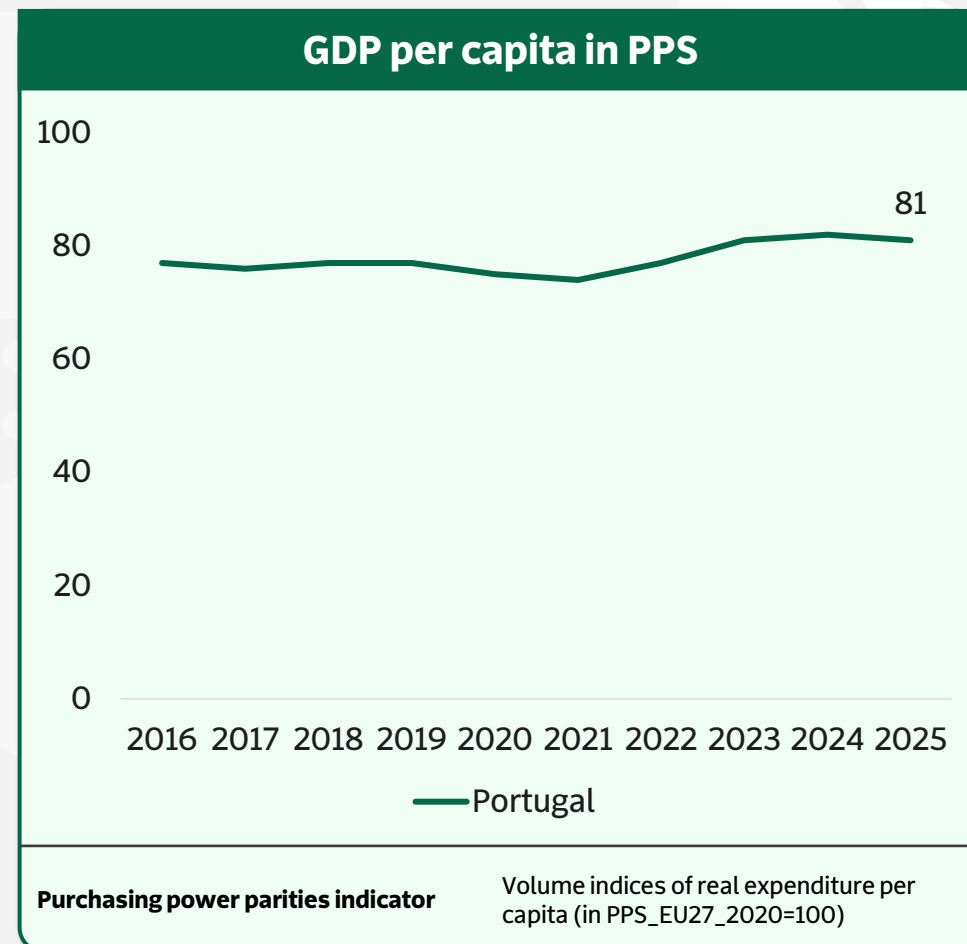
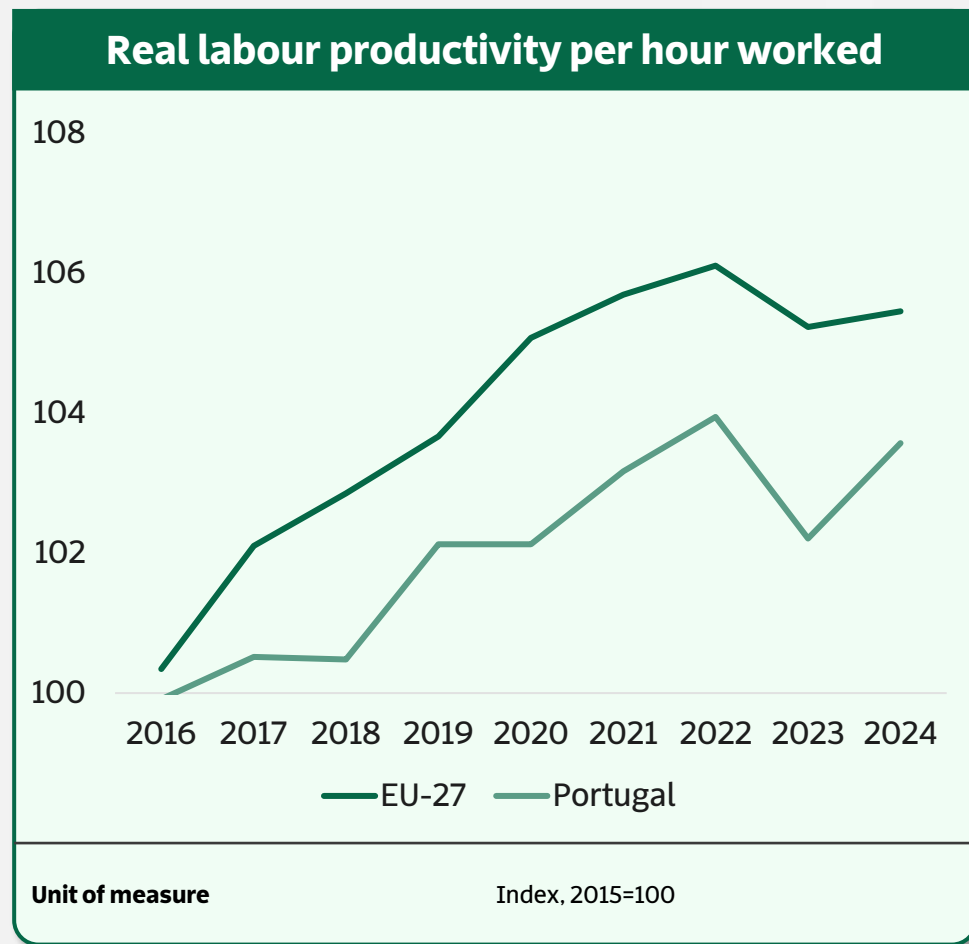
The Challenges of the EU

Despite rising income per capita, Europe is **losing** global economic weight, driven by a structural **productivity gap**



The Challenges of the Portuguese Economy

18th in the EU for labour productivity and the gap with the EU average has been widening, not closing



The Challenges of the EU and PT

Innovation & Technology Gap

- EU **R&D intensity** 2.24% of GDP (2024) vs South Korea 4.96%, US 3.45%, China 2.58%
- EU **productivity gap ~70%** explained by tech sector
- Only **4 of top 50** tech companies are European; EU share of global tech revenues fell from 22% to 18% (2013-2023)
- **No EU company >€100bn** created from scratch in 50 years
- ~70% of **foundational AI models** developed in US; 3 hyperscalers hold 65%+ of European cloud market
- Zero **EU innovation clusters** in global top 10 (US has 4, China has 3)

Financing for Innovation and Growth

- EU raises just 5% of **global venture capital** (US: 52%, China: 40%)
- Later-stage **financing gap** between EU and US is ~82%
- EU relies excessively on bank financing, poorly suited to fund innovation
- More than half of SMEs cite **regulatory burden** as their greatest challenge
- Single Market **fragmentation** leaves ~10% of potential EU GDP unrealised

Energy and Decarbonisation

- EU companies pay **electricity prices** 2-3x higher than in the US; natural gas 4-5x higher
- **Wind farm permitting** can take up to 9 years in some Member States vs under 3 in the most efficient
- **Energy-intensive industries** saw production fall 10-15% since 2021
- Average **time to agree new EU laws**: 19 months – undermining the coordinated industrial policy needed for the green transition

Strategic Dependencies & Security

- 75-90% of **global wafer fabrication** capacity is in Asia
- EU **relies on foreign countries** for over 80% of digital products, services and infrastructure
- Between mid-2022 and mid-2023, 78% of **defence procurement** went to non-EU suppliers, 63% to the US
- **Defence collaborative procurement**: only 18% of equipment spending in 2022 vs a 35% agreed benchmark
- 34 **mobile network operator groups** in EU vs a handful in the US or China

The Challenges of the EU and PT

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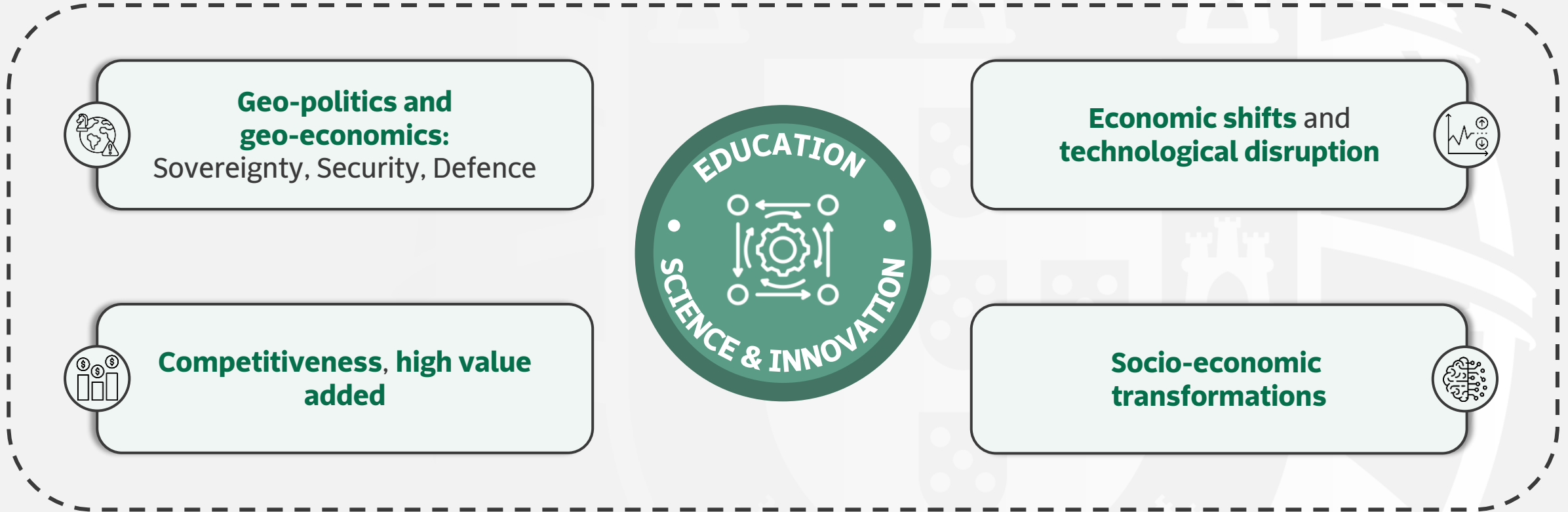
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The Challenges of the EU and PT



“There are two ways to grow. You can catch up with others, or you can pioneer the next breakthrough. And the latter demands a relentless commitment to fundamental research.”

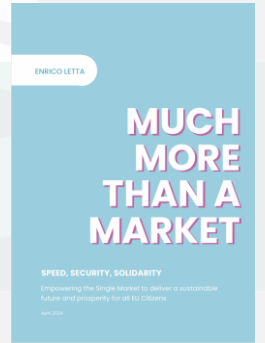


Philippe Aghion, European Commission, 2026

The Challenges of the EU and PT

Two conditions to fulfill the potential of the education, research and innovation European systems:

- Implement the “fifth freedom” proposed in the Letta Report
- Align national, regional and European policies



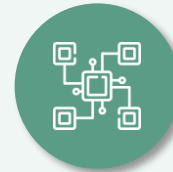
5th freedom

Remove barriers to the movement of talent, researchers, knowledge, data and funding across member states – Create a **single market for research and innovation**



The ERA and IA Act

The European Research Act (ERA) and the Innovation Act (IA) are **crucial to materialize** the 5th freedom, that will **stimulate the circulation** of knowledge and innovation, that will be the **basis of a vibrant and competitive ecosystem**



Reducing fragmentation

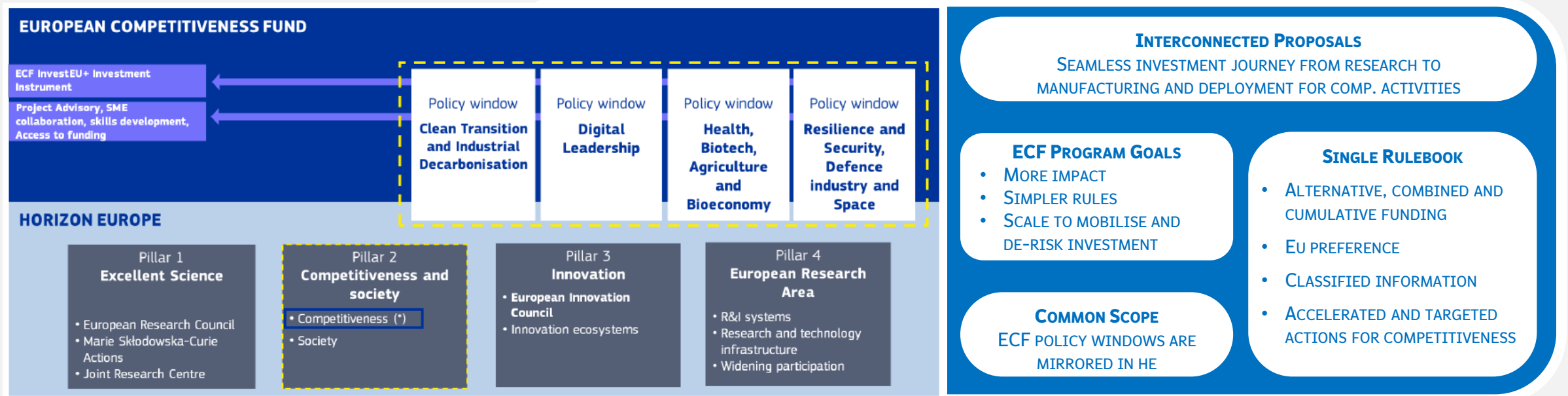
The effectiveness of the 5th freedom will also depend on the reduction of asymmetries across member states.

Widening has been crucial to reduce those asymmetries.

EU's response: ECF + HE

How to turn knowledge into innovation

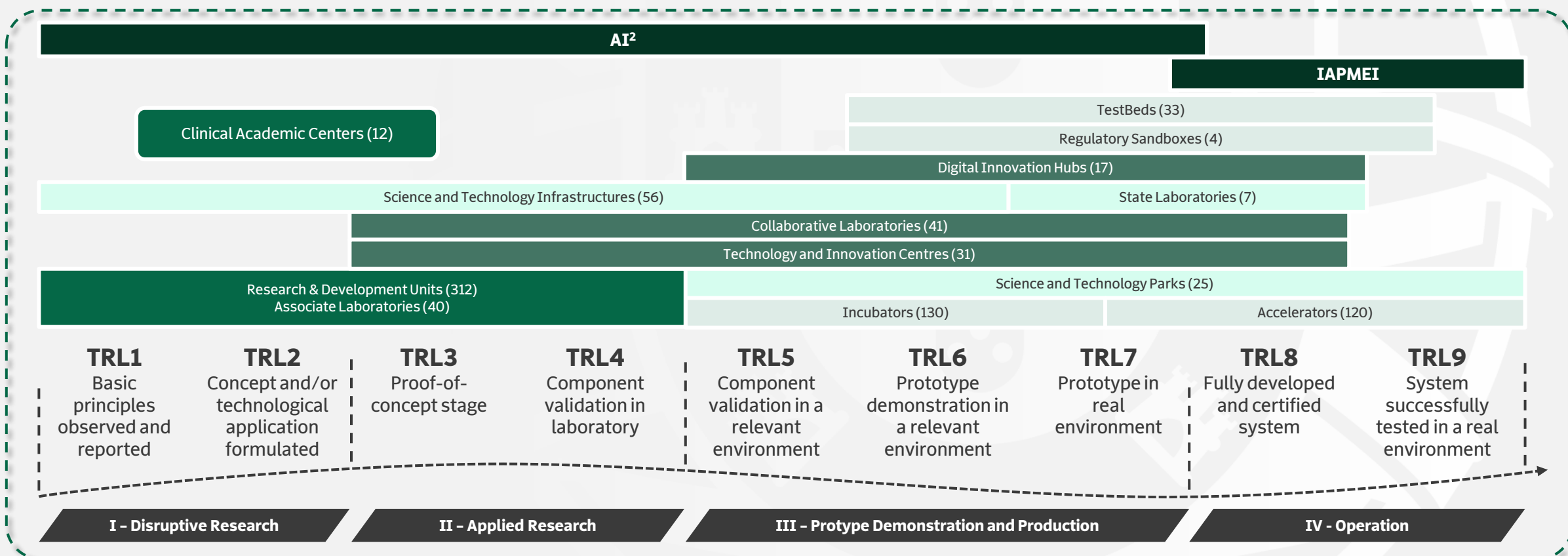
EU's competitiveness priority is reflected in the proposed structure of the next Multiannual Financial Framework (MFF)



Full investment journey: the European Competitiveness Fund (ECF) is tightly connected to the next Horizon Europe Program

The new Science and Innovation Law and the Structure of the Portuguese STI System

- **Consolidation and clarification** of the roles of the different entities within the National Science, Technology and Innovation System (SNCTI) – **Functional organisation**
- **Incentives** to **strengthen the link** between Research and Innovation



The new Research and Innovation Agency

More & Better Science
with Greater Impact:

A New Paradigm



Integration of the **entire value chain** between Research and Innovation



Stability and predictability in Research funding: multiannual contracts and medium- and long-term planning



Methodology for defining strategic domains and allocating funding



Agência para
a Investigação
e Inovação



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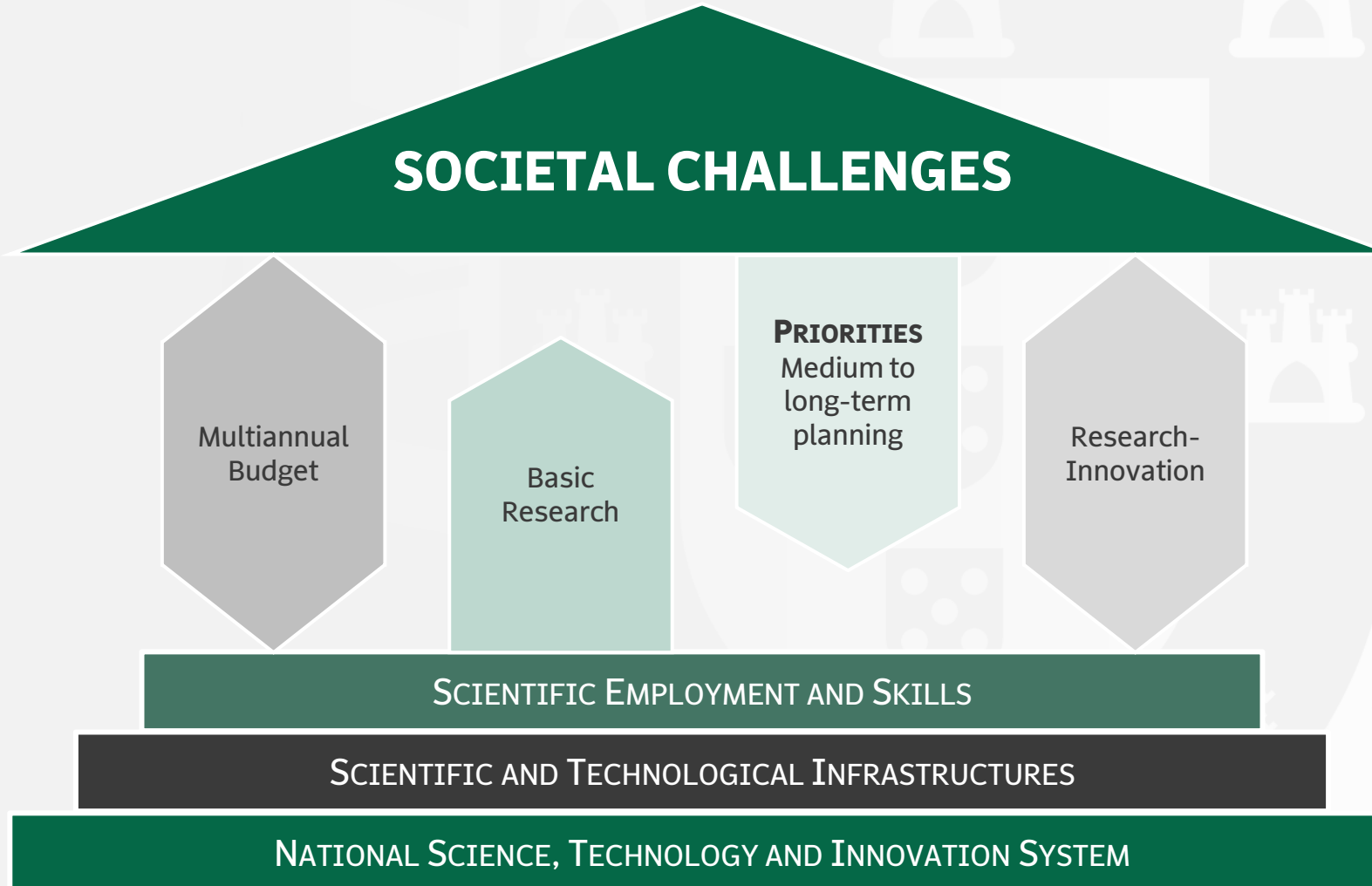
Portugal 2050: The Vision

Portugal asserts itself as a country that **creates talent and knowledge and transforms them into economic, social, cultural, and environmental value**, with a dynamic research and innovation system, interconnected through national and international networks, competitive and oriented towards excellence.

A country where high-quality research, technological development, and science-based entrepreneurship combine to **drive a more value-added and sustainable economy**, improving people's well-being and strengthening Portugal's position in Europe and the world.

Strategic assessment for defining national strategic research domains

Strategic pillars



Strategic assessment for defining national strategic research domains

What needs to be decided?

1. What **percentage** of the **budget** should be allocated to **R&D areas, strategic domains and the UPI**?
2. **How many and which strategic domains** should be included in the programme contract to be signed between the Government and AI²?
3. How should the budget be allocated **across strategic domains**?
4. How should the budget be allocated **across R&D areas**?



Strategic assessment for defining national strategic research domains

The CDF and assessment criteria

CRITICAL DECISION FACTORS	CDF1	CDF2	CDF3	CDF4	CDF5
	SCIENTIFIC RESEARCH EXCELLENCE	SCIENTIFIC & INNOVATION AS A DEVELOPMENT DRIVER	SNCTI ORGANIZATION AND COORDINATION	STABLE AND DIVERSIFIED FUNDING	HUMAN RESOURCES AND INFRASTRUCTURES
ASSESSMENT CRITERIA	• International Peer Recognition of Scientific Quality	• National and Regional Contribution to Competitiveness Productivity and Internationalization	• Integration of the Research and Innovation Ecosystems	• Financial Models	• Talent Attraction
	• Originality and Creativity	• Contribution to European Technological Sovereignty	• Interministerial and Intersectorial Governance	• Mobilization and Diversification of Funding	• Jobs Generation • Stabilization of Human Resources
	• Interdisciplinary	• Research & Innovation Value Chain • Territoriality and Society	• Anticipation and Strategic Intelligence	• Financial Additionality	• Infrastructures Advantages

CDF1 Scientific Research Excellence

Some Key Numbers

12.8%

publications in the
top 10% most cited
(6% above the EU average)

48%

Publication in Q1 journals

56%

International co-authorship

5,091

Firms with R&D activities
(2024)

~2,300

Academia-industry
collaborative projects
(2019-2024)

Scientific Publications by Field, 2019-2024

	No. Of publications ¹	% of Total	Publications per FTE in the field	Relative Specialisation Index
Natural Sciences	14,061	36.8%	1.0	1.1
Engineering and Technology	8,443	18.5%	0.4	1.2
Medical and Health Sciences	10,573	27.8%	1.7	1.0
Social Sciences	1,797	9.9%	1.0	1.2
Agricultural and Veterinary Sciences	3,812	4.7%	0,6	1.1

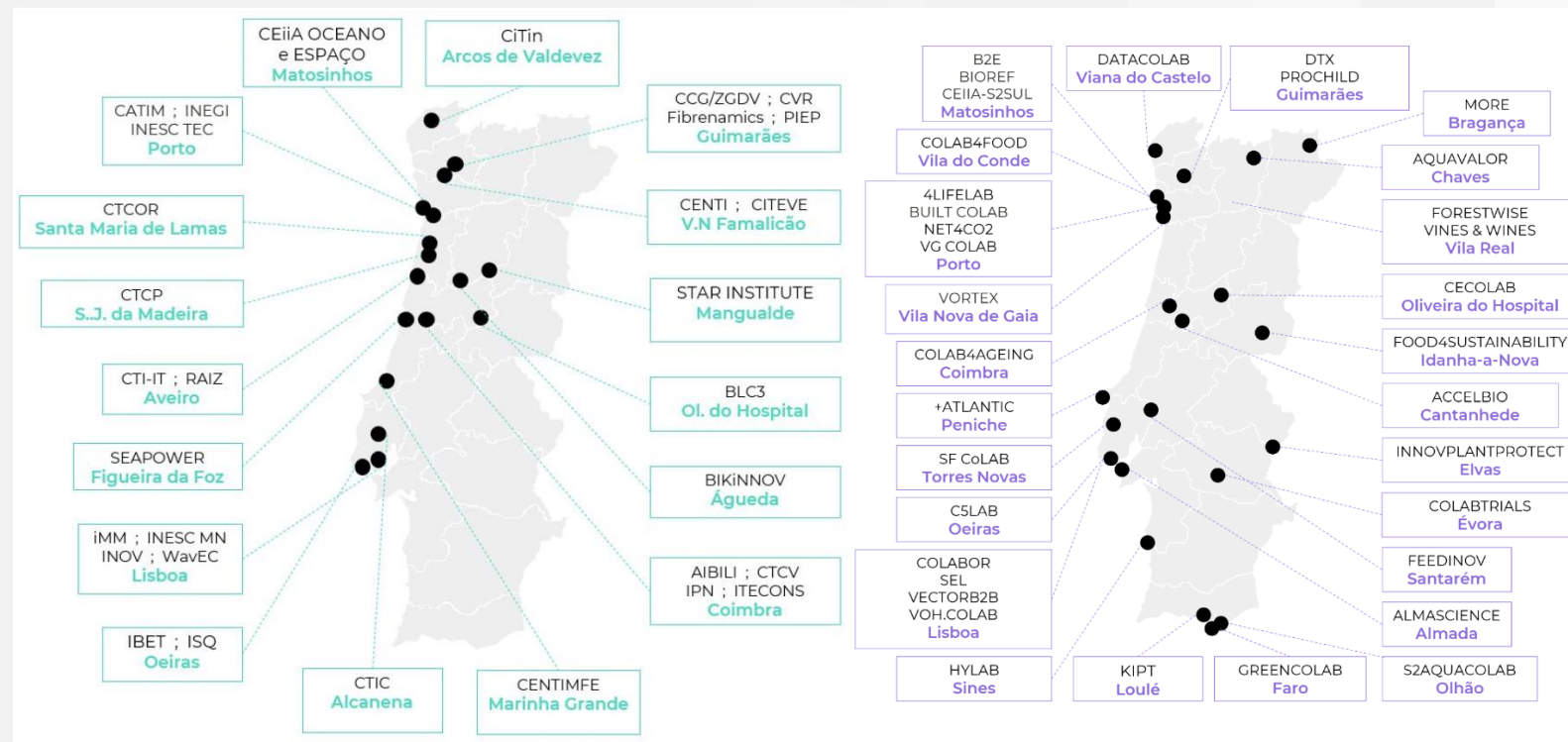
¹ Average value for the 2019-2024 period.
Not all the fields are represented in the Table

Source: R&I Ecosystem Working Group



CDF2 Scientific & Innovation as a development driver

The 31 CTIs and 35 CoLabs act as **catalysts** for the modernization of regional economies, promoting sustainable wealth creation and **increasing the competitiveness** of local businesses through digital and green transitions



Network of the 31 CTIs

Network of the 35 CoLABs

- Strengthen **regional innovation ecosystems** to improve access to research and funding
- Promote **competitiveness** and **regional cohesion**, particularly through the CTIs and Colabs, which provide technical support and technology transfer at a sectoral or regional level

Source: ANI, S.A.

CDF4 Stable and diversified funding

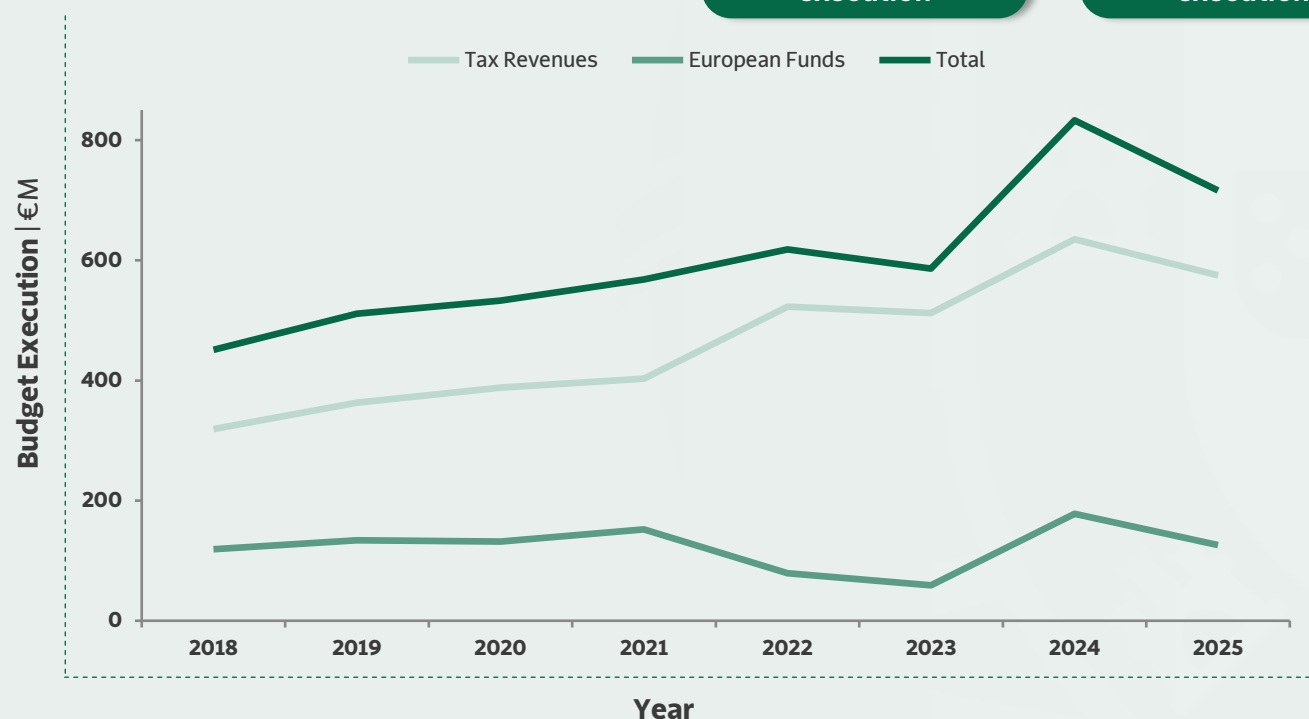
FCT Annual Budget Execution (€M)

€833M

2024 total budget
execution

€716M

2025 total budget
execution



Portuguese Participation in European programmes

Horizon europe: Key Numbers

€1,26B

(2,10% of total funding)
Total Net EU Contribution

14,447

(10,17% of HE)
Eligible Proposals

3,728

(2,71% of HE)
Organizations involved

Source: R&I Ecosystem Working Group; FCT/AI²

CDF4 Stable and diversified funding

Teaming for Excellence H2020 & HE

PROJECT NAME	INSTITUTION	PROJECT COORDINATOR	RESEARCH FIELD
• Biopolis	• Biopolis Association	• Nuno Ferrand	• Biodiversity
• MIA	• Univ. of Coimbra	• Manuel Santos	• Biomedicine
• NIMSB	• UNL	• António Jacinto	• Health/Biomedicine
• IMM-CARE	• GiMM	• Maria Mota	• Health/Biomedicine
• GeneT	• Univ. of Coimbra	• Luis Almeida	• Health/Biomedicine
• INESC TEC.OCEAN	• INESC TEC	• João Claro	• Ocean
• UAlgTec Heritage	• Univ. Algarve	• João Cascalheira	• Archaeology
• MEDSoilPlus	• Univ. Évora	• Fátima Batista	• Agri-food (soils)
• SAIL	• INESC-ID	• Inês Lynce	• Artificial Intelligence
• NOVA_i4SF	• UNL	• Eurico Cabrita	• Chemistry
• I3S-HEALTH	• i3S	• Cláudio Sunkel	• Health
• IISB	• Univ. Coimbra	• Lino Ferreira	• Health

- An example on how **Portuguese priorities are align with EU objectives**, in areas such as health, sustainable AI, environmental sustainability, soils, oceans and cultural heritage
- **12 projects** that **combine HE funding with national and regional investment**, reinforcing synergies between research, cohesion and smart specialisation policies
- More than **€350M** of total funding

CDF5 Human Resources and infrastructures

The Race for Education: Progress After a Long-Standing Lag

Distribution of **25-34-year-olds** by highest level of educational attainment (%)

	Lower secondary or below		Upper secondary		Higher Education	
	2016	2023	2016	2023	2016	2023
Portugal	31	18	35	41	35	<u>41</u>
OECD Average	17	14	41	40	<u>42</u>	47
EU25 Average	15	12	46	44	40	44
Espanha	35	26	24	22	41	52
Estonia	12	13	46	44	41	43
France	13	11	43	39	44	50

New RJIES and New Decree Law of Degrees and Diplomas aims to prepare HEI for a deeper integration in the European Education Area (Letta 5th freedom)

Fonte: OCDE / EAG2024

CDF5 Human Resources and infrastructures

Human Resources in Science

961

FCT-Tenure calls completed (87% of the planned calls)

PhD Studentships program

	2024	2025	2026 (evaluation underway)
No. of studentships awarded	1,507	1,553	1,600
Non-academic	451	550	600
Academic	1,056	1,003	1,000

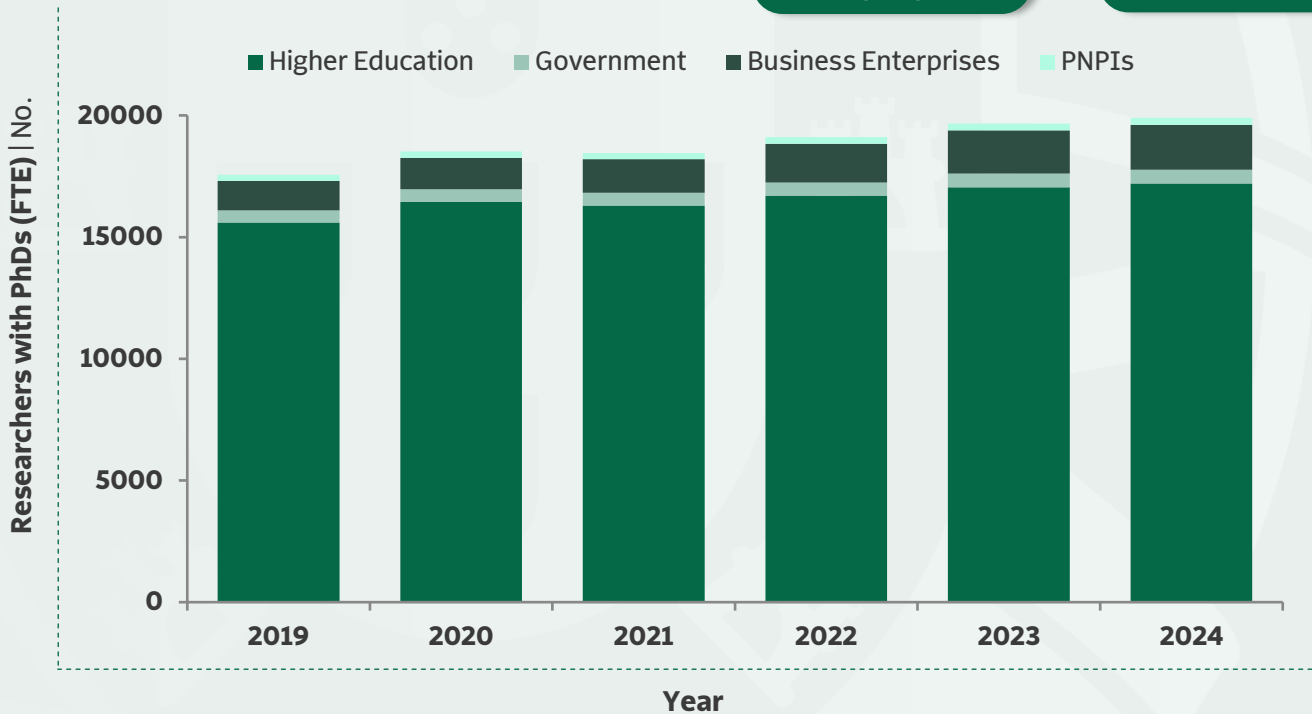
Number of researchers with PhDs (FTE)

19,900

PhD researchers
(FTE)

86%

in Higher
Education



Source: DGEEC, FCT/AI²



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CDF5 Human Resources and infrastructures

Portuguese participation in European Research Infrastructures

Portugal participates in **17 small-scale European research infrastructures** that are part of the ESFRI (European Strategy Forum on Research Infrastructures) ecosystem

Health & Food: ELIXIR; EuroBioImaging ERIC; ECRIN ERIC; EMBRC ERIC; Instruct ERIC; MIRRI ERIC; EU-OPENSOURCE ERIC

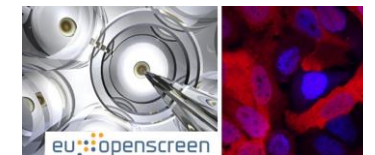
Social & Cultural Innovation: CLARIN ERIC; DARIAH ERIC; ESS ERIC

Environment: EMSO ERIC; EPOS ERIC; Lifewatch ERIC

Physical Sciences & Engineering: ESS ERIC

Data, Computing and Digital RIs: PRACE

Energy: ECCSEL ERIC; EU-SOLARIS



CDF5 Human Resources and infrastructures

Policy Support Facility: Research and Technology Infrastructures

 **Objective:** Support Portugal in reforming research and technology infrastructure policies, **aligning them with European strategies**, strengthening national coordination and prioritisation, and **boosting research excellence, innovation and competitiveness**

 Diagnosis:

- Governance and coordination mechanisms
- Funding models in relation to performance and sustainability
- Access conditions for both research organisations and companies (namely startups and SMEs)
- Integration within the landscape of Iberian, pan-European and international Research and Technology infrastructures



Portuguese people trust in science

For 30 years, *Ciência Viva* has brought **science closer to citizens**. In the future, it will strengthen its territorial presence and foster critical engagement with technological, climate and social challenges

22

Centres welcoming around 1 million visitors per year

897

Clubs, 3,968 partner organisations, 3,551 teachers and more than 1 million students involved

365th

Participants in *Ciência Viva no Verão*

Portugal **ranks third** among European countries in the share of respondents who view the **overall influence of science and technology on society positively**, nine percentage points above the EU average (92% vs 83%)





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