PRIORITIES FOR RESEARCH AND INNOVATION AND HORIZON EUROPE STRATEGIC PLAN 2025-2027

October 2025

Document elaborat de Unitatea Horizon Europe NCP din cadrul UEFISCDI ©. Octombrie 2025.
Autor: Antoaneta Victoria Folea

Contact:
Unitatea Horizon Europe NCP
Unitatea Executivă pentru Finanțarea Învățământului Superior, a Cercetării, Dezvoltării și Inovării – UEFISCDI
Str. Frumoasă 30 (parter), București
ncp@uefiscdi.ro
http://www.ncp.uefiscdi.ro

Contents

The European Commission's nine R&I areas of action (2024-2029)

Artificial Intelligence (AI) in Science
Bioeconomy
Energy
Environment
Food systems
Health
Industrial research & innovation
Social sciences & humanities (SSH)
Transport

	What	Why	EC		
Artificial Intelligence (AI) in Science	AI is moving from generic tools to discipline-specific copilots, data/compute access, and methods that can reshape the scientific process. The Commission has launched a **European AI in Science Strategy** anchored by **RAISE (Resource for AI in Science in Europe)** and is pairing this with "Apply AI" (industrial uptake) alongside the EU's horizontal AI Act obligations. **Dual strategies for AI (science & industry)**	AI is a competitiveness and sovereignty lever, Europe wants faster discovery, higher productivity in labs, and reduced dependence on foreign tech stacks, under a clear regulatory timeline (AI Act in force since 1 Aug 2024; staged application through 2026-27).	The aim is to: - accelerate the adoption of AI by scientists, by creating essential enablers, such as improved access to data, computational power and talent - monitor and steer the impact of AI on the scientific process, addressing science-specific AI challenges,	**Universities/Inst.:** access to shared compute/data/talent via RAISE; living guidelines for responsible gen-AI in research; new evaluation of AI's effects on scientific integrity. **Startups/SMEs:** clearer path to deploy AI into instruments, labs, and industry	A European Strategy for Artificial Intelligence in Science. Paving the way for the Resource for AI Science in Europe (RAISE) (https://research-and-innovation.ec.europa.eu/document/download/c1afd7d0-ff65-4f84-be48-b0e0949596c5_en?filename=COM_2025_724_1_EN_ACT_part1_v8.pdf) AI in science. Harnessing the power of AI to accelerate

			such as preserving scientific integrity and methodological rigour	under AI Act; funding via ERC/EIC/Partnerships	discovery and foster innovation: policy brief (https://op.europa.eu/en/publication-detail/-/publication/094c045c-9e21-11ee-b164-01aa75ed71a1/language-en) Scientific Advice Mechanism for the EC (SAM) - AI in Science: from advice to implementation (https://scientificadvice.eu/news/ai-in-science-from-advice-to-implementation/) ERC Foresight: Use and impact of Artificial Intelligence in the scientific process (https://erc.europa.eu/sites/default/files/2023-12/AI_in_science.pdf)
	What	**Why**	**EC**		
Bioeconomy	Scaling biotech & biomanufacturing, bio-based materials, agri-tech, blue bioeconomy, with a new **Bioeconomy Strategy** announced for 2025 and targeted measures (simplified regulation, standards, **EU Biotech & Biomanufacturing Hub**).	Decarbonisation + circularity, resilience of supply chains, and regional re-industrialisation align with the Green Deal and competitiveness agenda; bio-based value chains are strategic for materials and food security.	The bioeconomy means using renewable biological resources from land and sea, like crops, forests, fish, animals and micro-organisms to produce food, materials and energy. Stronger development of the bioeconomy will	**Universities/Inst**: demand for translational research and scale-up; CBE JU pipeline; RIVs (Regional Innovation Valleys) focus to reduce the innovation divide (esp. CEE).	Bioeconomy Strategy (https://environment.ec.europa.eu/strategy/bioeconomy-strategy_en) Building the future with nature: Boosting Biotechnology and Biomanufacturing in the EU (https://research-and-innovation.ec.europa.eu/document/download/47554ad

			help the EU accelerate progress towards a circular and low-carbon economy. It will help modernise and strengthen the EU industrial base, creating new value chains and greener, more cost-effective industrial processes, while protecting biodiversity and the environment.	**SMEs/Industrials**: routes to standards/finance (EIB, LIFE, Innovation Fund).	c-dffc-411b-8cd6-b52417514cb3_en)
	What	**Why**	**EC**		
Energy	Accelerated clean-energy R&I for REPowerEU targets, renewables, storage, Carbon Capture, Utilisation and Storage (CCUS), hydrogen, efficiency, and Euratom research/skills, integrated with Cluster 5 work programmes.	Energy causes >75% of EU GHG emissions; security after the gas crisis; industrial competitiveness (batteries, grids, hydrogen). Net-Zero Industry Act and Critical Raw Materials Act give the manufacturing and input-security spine.	REPowerEU will enable us to speed up this transition and move towards renewable energy sources and green hydrogen. This will make Europe more resilient and independent while providing sustainable, secure and affordable energy for all. Research and innovation are critical for delivering the solutions and system transformations. We must increase the	**Universities/Inst**: large consortia on storage, hydrogen, nuclear skills; policy-science interface (SET-Plan). **Companies/regions**: demo/scale-up (Innovation Fund, CINEA portfolios) and regulatory clarity for net-zero tech manufacturing	REPowerEU: A plan to rapidly reduce dependence on Russian fossil fuels and fast forward the green transition (https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3131)

			efficiency of the whole renewable energy value chain and integrate sustainability and circularity throughout it. In parallel, we must develop and demonstrate novel and disruptive renewable energy technologies and energy storage solutions. Carbon capture and storage will be needed to tackle remaining emissions. Clean hydrogen can play a key role for long-term energy storage and for reducing greenhouse gas emissions, in particular in sectors that are difficult to decarbonise with existing solutions, such as heavy-duty and long distance transport, and carbon-intensive industry.		
	What	**Why**	**EC**		
Environment	Cross-cutting science to deliver the European Green	Evidence-based policy for climate neutrality by	European research and innovation is key for	**Academia**: stable demand for	Environment, climate and health

	Deal: climate science, biodiversity, circular economy, environmental observation, water, nature-based solutions, urban transitions, plus missions/partnerships as delivery tools.	2050 and biodiversity recovery; the area stitches together multiple Green Deal pillars and citizen engagement.	combating climate change, implementing green industrial policy and achieving sustainable development. Becoming the world's first climate-neutral continent by 2050 will not be possible without an ambitious agenda linking research, innovation and investments with reforms and regulations in order to mobilise collective action for climate. Science is the foundation of evidence-based policies	monitoring/modelling and policy design support **Cities/regions/NGOs /industry**: solutions markets (NBS, waste-to-value, water resilience) with LIFE/Innovation Fund/Lighthouse projects	(https://research-and-innovation.ec.europa.eu/research-area/health/environment-climate-and-health_en)
	What	**Why**	**EC**		
Food systems	A mission-type transformation for sustainable, resilient, inclusive and healthy food systems aligned with Farm-to-Fork and Food2030; includes alternative proteins and supply-chain resilience.	Climate, biodiversity and nutrition/security shocks require systemic change from production to consumption; strong links to regional development via RIVs.	Business as usual is no longer an option in the way we produce, distribute and consume our food. Sustainable food systems are about making our food production system	**Universities/Inst**: systems modelling, consumer behaviour, nutrition, agritech pilots **SMEs/farmers/food industry**: new protein, packaging, traceability,	Food systems (https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy/food-systems_en)

			fairer, more sustainable and respectful to the environment and reconciling what we eat with the needs of the planet. Research and innovation are key to making food systems more sustainable, resilient, inclusive and healthy. Regional Innovation Valleys for Bioeconomy and Food Systems	valorisation of by-products; financing via HE, Innovation Fund, EIB.	
	What	**Why**	**EC**		
Health	From pandemic readiness to antimicrobial resistance (AMR), cancer, non-communicable diseases (NCDs) and digital health/personalised medicine, with synergies to EU4Health and the Innovative Health Initiative partnership. A Life Sciences Strategy (2025) aims to make Europe a global leader by 2030.	Ageing, cost pressures, climate-health risks and AMR create structural challenges; COVID-19 revealed the value of coordinated R&I	Europe is facing serious healthcare challenges and the COVID-19 pandemic has shown the importance of coordinating health research and innovation among European countries.	**Universities/Inst/Hospitals**: clinical trials networks, data/biobanks, European Reference Network (ERNs); AI tools for screening and discovery **Pharma/med-tech/diagnostics SMEs**: de-risked pipelines via IHI, EIC, and mission-style cancer actions.	Health research and innovation (https://research-and-innovation.ec.europa.eu/research-area/health_en)
	What	**Why**	**EC**		

Industrial research & innovation	Translating key enabling and dual-use technologies into competitive value chains: advanced manufacturing, materials/chemicals (Safe-and-Sustainable-by-Design), metrology, tech infrastructures, valorisation policy, and dual-use guidance.	Competitiveness and open strategic autonomy: align R&I with Chips Act, AI and data rules, Net-Zero Industry Act (NZIA), Critical Raw Materials Act (CRMA), and industrial policy. Recent Commission work also addresses dual-use R&I governance	Research and innovation are crucial for driving a sustainable, equitable, and prosperous transformation of industries across value chains in Europe. This transformation will help safeguard competitiveness, create jobs and improve our lives	**Universities/Inst**: industry-linked programmes, testbeds, technology infrastructures, and updated research assessment/valorisation incentives **Industry/SMEs**: clearer scale-up pathways, standards, and SSbD frameworks; innovation radar and partnerships	European Green Deal (https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en) An economy that works for people Ensuring social fairness and prosperity (https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/economy-works-people_en) A Europe fit for the digital age Empowering people with a new generation of technologies (https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age_en) EU valorisation policy: making research results work for society (https://research-and-innovation.ec.europa.eu/research-area/industrial-research-and-innovation/eu-valorisation-policy_en)

	What	Why	EC		
Social sciences & humanities (SSH)	SSH is embedded both as a distinct area (democracy, governance, culture/creative industries, inequalities, migration) and as a horizontal within clusters/missions.	Major transitions fail without legitimacy, behavioural change, and institutional capacity; SSH research is core to citizens-centred policy	The EU stands for a unique way of combining economic growth with high levels of social protection and inclusion, shared values including democracy, human rights, gender equality, and the richness of cultural diversity. This model is constantly evolving and needs to deal with multidimensional challenges.	**Universities/think-tanks**: demand for policy design, public engagement, ethics, and governance research; ties to cultural heritage infrastructures **Public sector/NGOs/cities**: evidence for democratic resilience and inclusive transitions	Social sciences and humanities (https://research-and-innovation.ec.europa.eu/research-area/social-sciences-and-humanities_en)
	What	**Why**	**EC**		
Transport	Decarbonised, connected, safe & smart mobility across modes; STRIA roadmaps (electrification, alternative fuels, automation, infrastructure, vehicle design, etc.) guide priorities; delivery mainly via Cluster 5 and large partnerships.	Transport drives a big share of emissions and competitiveness; mobility tech is strategic (batteries, power electronics, rail/waterborne retrofits, multimodal orchestration).	Reducing transport's impact on the climate and natural environment is the most urgent priority, in order to meet COP21 Paris Agreement commitments and align with broader EU transport, climate and energy goals.	**Universities/Inst**: systems-level R&I (vehicles-to-grid, logistics platforms, safety/automation HMI - human-machine interaction) **OEMs (Original Equipment Manufacturer)/suppliers/operators/cities/ports**: TRL7-9 demos, regulatory sandboxes, skills pipelines; strong	Strategic Transport Research and Innovation Agenda (STRIA) (https://research-and-innovation.ec.europa.eu/research-area/transport/stria_en) Research & innovation for sustainable & smart mobility (https://op.europa.eu/en/publication-detail/-/publication/db23af29-

				PPP ecosystem (e.g., ERTRAC, Clean Aviation/Waterborne).	3b60-11eb-b27b-01aa75ed71a1/)

Why this is important for the EU (the strategic through-line)

Because competitiveness = capability to deliver the green & digital transitions at home, with fewer critical dependencies and more societal buy-in. The Horizon Europe 2025-27 plan formalises this, and SOTEU-2025 puts innovation/independence at the centre of the political narrative.

Horizon Europe Strategic Plan 2025-2027

(https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/strategic-plan_en)

Three Strategic Orientations:
(A) the green transition
(B) the digital transition
(C) a more resilient, competitive, inclusive & democratic Europe

Link between the 9 R&I priorities and HE SP25-27:

The 9 R&I priorities are system levers (energy, transport, food, environment), general-purpose tech (AI), or capability pillars (health resilience, industrial scale-up/valorisation, SSH for legitimacy). That mirrors SP25-27's orientations and expected impacts which drive the Work Programmes and calls. They align R&I with industrial policy so results can scale in Europe: NZIA, CRMA, Chips Act; plus AI's twin moves: Apply AI (i.e. industry) + AI in Science/RAISE.

R&I priority	SP25-27 orientation(s)	Main delivery mechanisms (clusters/missions/partnerships)	Enabling policies that explain *why* this Area is prioritised now
AI in Science	Primarily (B) Digital, with (C) (competitiveness/sovereignty) spill-over	Cluster 4 (data/AI), cross-cutting into all clusters; ERA actions on research assessment/data; new AI in Science Strategy with RAISE as a virtual institute; synergies with Digital Europe	AI Act in force with staged application; Commission "Apply AI" push and AI in Science to accelerate uptake in science & industry, framed as competitiveness and autonomy
Bioeconomy	(A) Green and (C) (regional re-industrialisation)	Cluster 6 (Food, Bioeconomy, Natural Resources); CBE JU partnership; Missions (Soil, Oceans, Cities interface)	Green Deal, circularity and materials security; alignment with industrial policy (standards, scale-up)
Energy	(A) Green and (C) (security)	Cluster 5 (Climate, Energy & Mobility), SET-Plan updates, Innovation Fund synergies; Euratom skills	Net-Zero Industry Act (NZIA) (make EU a home for net-zero tech manufacturing) and CRMA (inputs security)

Environment	(A) Green, with (C) via resilience & citizens' well-being	Cluster 6 (biodiversity, circularity, water, NBS); EU Missions (Adaptation, Soil, Oceans, Cities)	Green Deal delivery needs science/monitoring & social uptake; strong link to place-based action
Food Systems	(A) Green and (C) (health, resilience, territorial)	Cluster 6; Food 2030; Mission interfaces; Regional Innovation Valleys for place-based pilots	Sustainability, nutrition & shocks call for systemic change from production to consumption
Health	(C) (resilience, AMR, ageing), with (B) (digital health, personalised medicine)	Cluster 1 (Health); IHI JU; synergies with EU4Health; Mission on Cancer	Post-COVID readiness, NCDs & AMR; pipeline de-risking through large partnerships
Industrial R&I	(C) (competitiveness/sovereignty) and (B) (deep-tech scale-up)	Cluster 4 (industry, materials, safe-and-sustainable-by-design, SSbD), standardisation/valorisation; technology infrastructures & PPPs	Chips Act (semiconductors), NZIA, CRMA, tying R&I to EU industrial policy and inputs
Social Sciences & Humanities (SSH)	(C) (democracy, inclusion), embedded across (A) & (B) as a horizontal	Cluster 2 (Culture, Creativity & Inclusive Society), mainstreamed SSH across clusters and missions	Transitions need legitimacy, behaviour change, governance & participation
Transport	(A) Green (decarbonisation) and (C) (competitiveness); digitalisation of mobility links to (B)	Cluster 5; STRIA roadmaps; large PPPs (Clean Aviation, Clean Hydrogen links, Waterborne, Shift2Rail successor)	Mobility is a major emitter and competitiveness lever; grid/battery/hydrogen interfaces

What this means in real terms for researchers:

1) Anchor every idea to an HE SP25-27 "expected impact"

Work Programmes and topics explicitly require a credible pathway to the SP25-27 impacts. Read your Destination's "expected impact" text and mirror it in your outcomes/KPIs.

2) Think *deployment* as much as discovery

Calls increasingly favour demonstration, standards, and scale-up (technology infrastructures, SSbD for materials/chemicals, validation with users/authorities). Cite standards and regulatory pathways up front.

3) Use the policy spine to strengthen your case

If your project touches clean-tech manufacturing or inputs, reference NZIA (manufacturing capacity), CRMA (raw materials targets), Chips Act (semic). Review how your outputs de-risk those policy goals.

4) For AI-enabled research, show compliance + capability
Explain data governance, model risks, provenance, evaluation, and how you will leverage shared EU assets (e.g., RAISE), this is now a competitiveness priority in SP25-27 and fresh Commission strategies.
5) SSH is not optional.
Even tech projects should integrate SSH (acceptance, behaviour, regulation, equity). Many topics assess SSH quality under Excellence/Impact.
6) Gender & inclusion are formal requirements
If you're a public body, university or research org, you must have a Gender Equality Plan to be eligible, and integrate the gender dimension in your R&I content unless the topic says otherwise.
7) Build consortia for *scale* (and valorisation)
Include standardisation bodies, regulators/authorities, end-users, regions/cities, and investors early. Use the Knowledge Valorisation codes (IP management, standardisation, co-creation) to structure your exploitation plan.
8) Tap Partnerships & Missions
Many high-TRL or domain-specific calls flow via Joint Undertakings (e.g., IHI, CBE, Clean Aviation/Hydrogen/Waterborne). Map your TRL and timelines to these roadmaps.
9) Don't forget Widening/ERA tools
If you're in or partnering with Widening countries, combine your research bid with Twinning/Teaming/ERA Chairs or ERA-reform actions to de-risk capacity and improve your score on excellence & impact.
10) Reform research assessment & careers in your proposal
SP25-27 and the ERA agenda favour teams that recognise diverse outputs (software, datasets, policy tools) and improve careers. Refer to CoARA and the Council Recommendation on research careers (new Charter)
11) Plan data & compute like infrastructure
Explicit DMPs, FAIR data, and compute plans (including where models run and how results are reproduced). This is crucial in AI-heavy bids and for cross-cluster work.
12) Show place-based value
Link your pilots to regions/cities (e.g., Regional Innovation Valleys, Mission Cities/Adaptation) to demonstrate replicability and policy uptake.

Implications for universities and institutes:

- **Strategy & portfolios:** Align internal seed funding and TT offices to SP25-27 expected impacts, the big JUs/Partnerships, and the industrial policy spine (NZIA/CRMA/Chips). This is now how "European value" is evidenced.

- **Governance & culture:** Adopt CoARA principles; update promotion/tenure to reward Open Science, software, datasets, and standardisation work; this strengthens proposals under Excellence/Implementation.
- **People & pipelines:** Use the Council Recommendation on research careers to upgrade career paths and inter-sectoral mobility; reference it in Capacity Building/Skills work packages.

HE SP25-27 in each HE programme @ UEFISCDI

HE programme	What changes (policy → practice)
ERC	ERC stays field-open and curiosity-driven; it is not topic-steered by HE SP25-27. The practical implications of the plan are horizontal: Open Science (data mgmt), research integrity, gender (host's GEP), portability of grants. Use ERC to seed bold ideas that later translate (EIC/Clusters).
MSCA	HE SP25-27 emphasises skills for green & digital transitions, intersectoral exposure, and geographical openness. MSCA is the main people programme aligning talent to those goals. Research and innovation
CL2	HE SP25-27 pushes democracy, trust, governance, inequalities, migration, and cultural heritage, all core to Cluster 2; topics explicitly mirror expected impacts from HE SP25-27. 2025 WP and REA stats show high demand, proposals must be laser-focused on policy uptake and end-users (public authorities, CSOs).
CL6	This is the Green Deal systems cluster; HE SP25-27 lines up soil, water, biodiversity, circular bioeconomy, alternative proteins, and environment-health links. Expect stronger demonstration and place-based pilots.
EIC	EIC WP 2025 prioritises strategic tech & scale-up aligned with SP25-27 competitiveness (deep-tech, industrial supply chains). Budgets >€1.2-1.4bn with a mix of Open and Challenge calls. Use ERC/EIC ladders: ERC → EIC Transition when there's protectable IP and early validation; EIC Accelerator for market entry with blended finance.
EIE	EIE funds CONNECT / SCALEUP-type actions building interconnected regional/national ecosystems, complementing Widening and EIC; HE SP25-27 frames this as deployment capacity and diffusion of innovation.
Widening&ERA	HE SP25-27's cohesion and talent goals are executed here: Teaming, Twinning, ERA Chairs, Excellence Hubs, Pathways to Synergies, WIDERA Talents etc. Use these to de-risk excellence bids and to fix structural gaps before or alongside Cluster/EIC proposals.

Quick "do this next" checklist (all programmes):

- Mirror HE SP25-27 expected impacts in your Excellence/Impact sections (verbatim where relevant).
- Show deployment thinking early: standards, regulation, users, and, when applicable, SSbD and public procurement angles.
- Hard-code Open Science & data/compute plans (especially for AI-rich work).
- Eligibility must: Gender Equality Plan for host institutions; integrate gender dimension where relevant.
- Use ladders: ERC>EIC, MSCA>Clusters, Widening>all. Pair a science proposal with a capacity proposal if you're in (or partnering with) a Widening country.

Implications for applicants:

HE programme	What to concentrate on
ERC	Stay curiosity-driven; align only with horizontal SP25-27 asks: Open Science (FAIR data/DM Plan), research integrity, host's Gender Equality Plan (GEP), portability. If your science uses heavy AI/compute, budget credible data+compute plans and ethics from day one (even though ERC is bottom-up). Frontier → translation path: Plan an ERC PoC to validate use-cases, then a glidepath to EIC Transition if protectable IP emerges. Cite it briefly in your long-term vision. AI-intensive basic research: spell out model/data provenance & reproducibility (reviewers are checking).
MSCA	Skills for green & digital transitions, intersectoral exposure, mobility; use the latest MSCA WP 2023-25 rules for 2025 calls. Concrete training plans (data stewardship, standardisation, entrepreneurship) and secondments.
CL2	Build to HE SP25-27 expected impacts (democracy, governance, trust, inequalities, heritage). Your outcomes must be ready for policy uptake (toolkits, standards, data for authorities). Strong SSH methodology, ethics & engagement (citizens/CSOs/public bodies in the consortium).

CL6	System transformation + demonstration: soil/water/biodiversity, circular bioeconomy, food systems; design place-based pilots with buyers/regulators on board. Integrate SSbD and standardisation tasks; plan LCA, safety, acceptance studies.
EIC	Deep-tech + scale-up aligned to HE SP25-27 competitiveness Clear IP, regulatory, and standardisation strategies; customer validation early; for Accelerator, de-risk with LoIs and freedom-to-operate.
EIE	Build interconnected regional/national deep-tech corridors; address the innovation divide; tie to the New European Innovation Agenda levers (testbeds, procurement, talent). Choose CONNECT (ecosystem services, brokerage) or SCALEUP (investment readiness, internationalisation) actions deliberately.
Widening&ERA	Use Teaming, Twinning, ERA Chairs, Excellence Hubs, Talents to fix capacity gaps and de-risk excellence bids; sync with RIS3/RRF/Interreg for deployment finance. Embed GEP compliance, research careers/assessment reform, Open Science, these are scored and/or eligibility-relevant.

Recommendation for applicants:

- Write to HE SP25-27 expected impacts, verbatim where relevant. Map each KPI to an impact statement; evaluators look for this traceability.
- Design for deployment from the outset: standards, regulatory pathway, conformity assessment, public procurement, and real users in the consortium.
- Data & compute are infrastructure: budget repositories, governance, and compute access (esp. AI-heavy projects).
- SSH and gender aren't box-ticks: integrate SSH methods and the gender dimension where relevant; keep the host GEP valid.
- Use ladders: ERC→EIC (PoC/Transition), MSCA→Clusters, WIDERA→all; EIE to knit investors/testbeds so Cluster/EIC results scale.

Horizon Europe Strategic Plan 2025-2027 (orientations & expected impacts) - Policy shift

There is a **clear and deliberate policy shift** in European Research and Innovation (R&I) strategy for 2025-2027 compared to 2020-2024.
It's not a new "turn" in Horizon Europe's architecture, but a *rebalancing* of focus: from ***discovery and coordination*** to ***deployment, competitiveness, and sovereignty*.**

The big policy shift: From Vision to Implementation

2020-2024	2025-2027
the first period built the *rules* and *ecosystem*	the second period demands *results and market readiness*
Framing & Recovery: "European Green Deal", "Digital Decade", and post-COVID recovery guided priorities. Focus on missions, new partnerships, and rebuilding ERA cooperation.	**Execution & Competitiveness:** Green and digital goals remain, but the narrative is industrial scale-up, strategic autonomy, and AI-enabled science.
Building common instruments and ERA reform (CoARA, Open Science, GEPs).	Using these instruments to deliver measurable results and economic value for Europe.
R&I as a *societal* project.	R&I as a *sovereignty and competitiveness* instrument.

The Horizon Europe Strategic Plan 2025-2027 mirrors this shift:
HE SP 21-24 Oriented around *recovery*, *climate neutrality*, *digital transition*, *resilience*.
HE SP 25-27 Keeps the same three "strategic orientations", but redefines their content

Orientation	2020-2024	2025-2027 update
A. Green Transition	Climate neutrality, sustainability.	Industrial deployment of clean tech, net-zero manufacturing, resource sovereignty.
B. Digital Transition	Data, AI, cybersecurity.	AI in Science, trustworthy genAI, Chips Act integration, compute & data access.
C. Resilient, competitive, inclusive & democratic Europe	Health, democracy, recovery.	Competitiveness, skills, sovereignty, research careers, citizen trust, and SSH for legitimacy.

The new watchwords

2020-2024	2025-2027
"Missions and partnerships"	"Deployment, scale-up, impact"
"Excellence & Open Science"	"Excellence *plus* strategic autonomy"
"Green and digital transitions"	"Green, digital *and competitive* Europe"
"ERA reform"	"ERA delivery"
"Research & society"	"Research & market/industry"
"Coordination"	"Implementation & sovereignty"

What this means concretely for researchers and institutions

Level	Then (2020-24)	Now (2025-27)
Proposals	Focus on excellence, interdisciplinarity, and cross-border cooperation.	**Must show** *deployment pathways*, *standardisation*, *policy alignment*, and *industrial relevance*.
Evaluation	Impact section valued but often abstract.	Impact must clearly map to **HE SP25-27 expected impacts** (economic, technological, or societal).
Consortia	Academia-heavy OK.	**Include end-users, industry, regulators, and cities**; **no "research-only" projects for applied clusters**.
Funding distribution	Basic research + mission pilots.	Higher TRL projects, tech infrastructures, scale-up support (EIC, Innovation Fund links).
Data & AI	FAIR data recommended.	**AI governance, compute access, and compliance** now core (ERA + AI Act).
Careers & evaluation	ERA policy under discussion.	Mandatory implementation (GEPs, **CoARA principles, career reform**).

What researchers/universities should *do differently now:*

1. **Read every topic against SP25-27 "Expected Impacts."** Use the same language in your proposal KPIs and logic models.
2. **Show deployment & value creation.** Who will use the results? When? How will you ensure uptake (standards, regulation, procurement)?
3. **Integrate industrial and policy partners.** Include regions, agencies, or companies from the start.

4. **Plan data, compute, and AI responsibly.** DMPs are not formalities anymore, they show credibility and compliance.
5. **Adopt ERA reforms internally.** Have a valid Gender Equality Plan, sign CoARA or align assessment, build Open Science infrastructure.
6. **Position your work in the European sovereignty narrative.** Whether materials, chips, health, or AI, show how your research strengthens Europe's capacity to act independently.

For example:

- **Cluster 6 (Bioeconomy):** New calls include *industrial scaling of bio-based chemicals* and *regional circularity* pilots.
- **EIC Accelerator:** Now explicitly references NZIA and CRMA, prioritising technologies that reduce dependence on third countries.
- **MSCA & ERC:** Emphasis on training and excellence remains, but with explicit attention to Open Science, AI/data literacy, and impact pathways.
- **WIDERA:** Focus shifts to structural reform and connecting regional ecosystems to EU value chains (Excellence Hubs, Synergies).

Horizon Europe 2025-2027 is not just about generating new knowledge; it's about **turning knowledge into capability** (technological, industrial, and societal).

Researchers and universities who can **connect excellent science with deployment, policy uptake, and European autonomy** will stand out.

References / Sources:

European Strategy for AI in Science (https://research-and-innovation.ec.europa.eu/document/download/c1afd7d0-ff65-4f84-be48-b0e0949596c5_en?filename=COM_2025_724_1_EN_ACT_part1_v8.pdf)

RAISE - Resource for AI Science in Europe (https://research-and-innovation.ec.europa.eu/research-area/ai-science_en)

Living Guidelines on responsible use of generative AI in research (https://research-and-innovation.ec.europa.eu/knowledge-publications-tools-and-data/publications/all-publications/factsheet-generative-ai-research-2024_en)

AI Act (Regulation (EU) 2024/1689) (https://eur-lex.europa.eu/eli/reg/2024/1689/oj)

New EU Bioeconomy Strategy (https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy_en)

Biotechnology & Biomanufacturing Package (COM(2024)137) (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52024DC0137)

Regional Innovation Valleys for Bioeconomy (https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy/regional-innovation-valleys-bioeconomy_en)

Accelerating Clean Energy Innovation (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52016DC0763)

REPowerEU (Hydrogen, solar, biomethane R&I) (https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/repowereu-affordable-secure-and-sustainable-energy-europe_en)

EU - Catalyst Partnership (https://research-and-innovation.ec.europa.eu/knowledge-publications-tools-and-data/publications/all-publications/eu-catalyst-partnership_en)

Hydrogen Strategy (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0301)

Euratom Programme 2028-2032 (proposal) (https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/euratom-research-and-training-programme_en)

Environment R&I area (Green Deal, biodiversity, circular economy, etc.) (https://research-and-innovation.ec.europa.eu/research-area/environment_en)

EU Missions (Climate, Ocean, Cities, Soil) (https://research-and-innovation.ec.europa.eu/missions_en)

Food 2030 Policy Framework (https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy/food-systems/food-2030_en)

Sustainable Food Systems Partnership (https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy/food-systems_en)

EU Life Sciences Strategy (https://commission.europa.eu/document/fa7c75e5-6a63-46db-918f-81a6cf4491e7_en)

Horizon Europe Cluster 1 Health Work Programme 2025 (https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-search)

Strategic Agenda on Health & Climate Change (https://research-and-innovation.ec.europa.eu/research-area/health/health-and-climate-change_en)

ERA Policy Agenda 2025-2027 (https://research-and-innovation.ec.europa.eu/news/era-policy-agenda-2025-2027-2025-05-23_en)

Technology Infrastructures (ERA Action 16) (https://research-and-innovation.ec.europa.eu/knowledge-publications-tools-and-data/publications/all-publications/technology-infrastructures-tis-2022-09-26_en)

Safe & Sustainable by Design (SSbD) framework (revised) (https://ec.europa.eu/environment/strategy/chemicals-strategy-safe-and-sustainable_en)

SSH Policy Areas (Democracy, Culture, Gender, Inequalities) (https://research-and-innovation.ec.europa.eu/research-area/social-sciences-and-humanities_en)

ERA Action: Science for Policy (S4P) (https://research-and-innovation.ec.europa.eu/news/era-policy-agenda-2025-2027-2025-05-23_en)

STRIA (Strategic Transport R&I Agenda) (https://transport.ec.europa.eu/transport-themes/research-and-innovation/stria_en)

Sustainable & Smart Mobility Strategy (SSMS) (https://transport.ec.europa.eu/transport-themes/research-and-innovation/sustainable-and-smart-mobility-strategy_en)

Mission: Climate-Neutral & Smart Cities (https://research-and-innovation.ec.europa.eu/missions/climate-neutral-and-smart-cities_en)