praxi
help-forward network

Εθνικόν και Καποδιστριακόν Πανεπιστήμιον Αθηνών

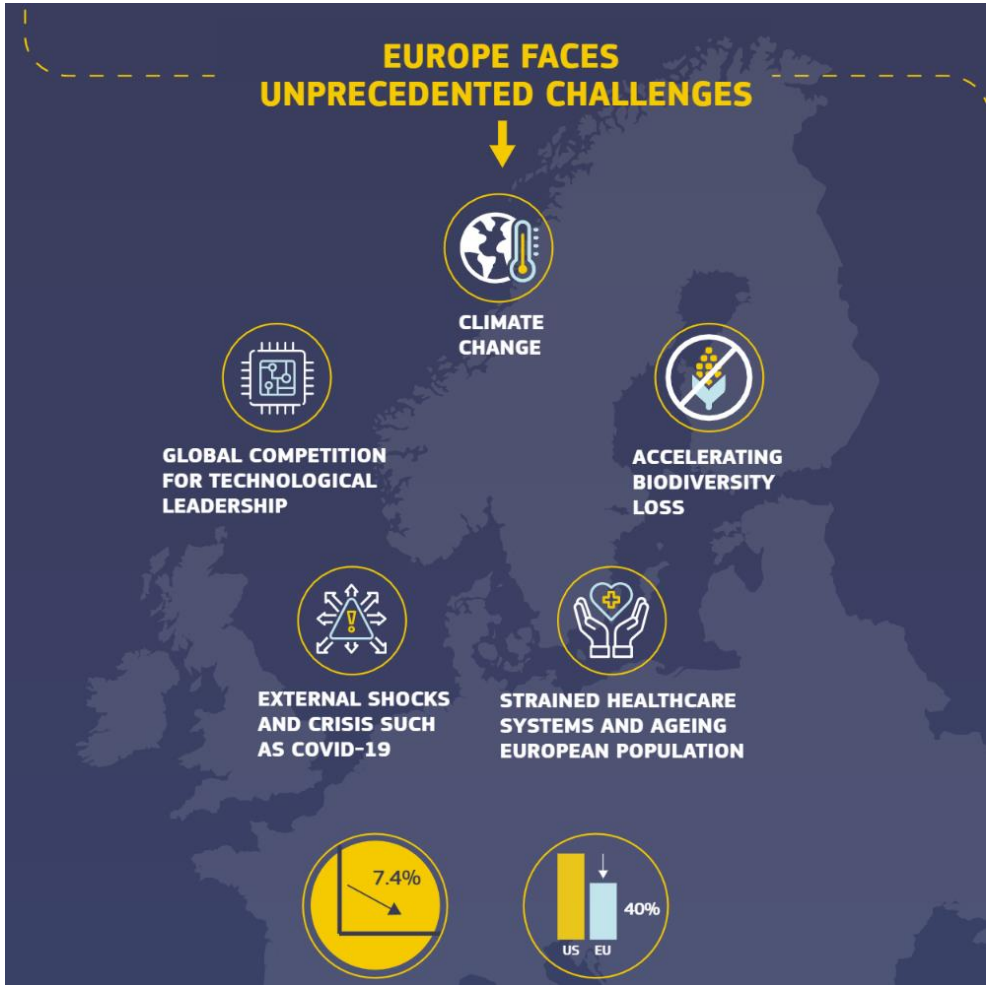
ΕΤΑΙΡΕΙΑ ΑΞΙΟΠΟΙΗΣΕΩΣ ΚΑΙ ΔΙΑΧΕΙΡΙΣΕΩΣ ΤΗΣ ΠΕΡΙΟΥΣΙΑΣ ΤΟΥ ΠΑΝΕΠΙΣΤΗΜΙΟΥ ΑΘΗΝΩΝ

Παρουσίαση του προγράμματος Ορίζοντας Ευρώπη

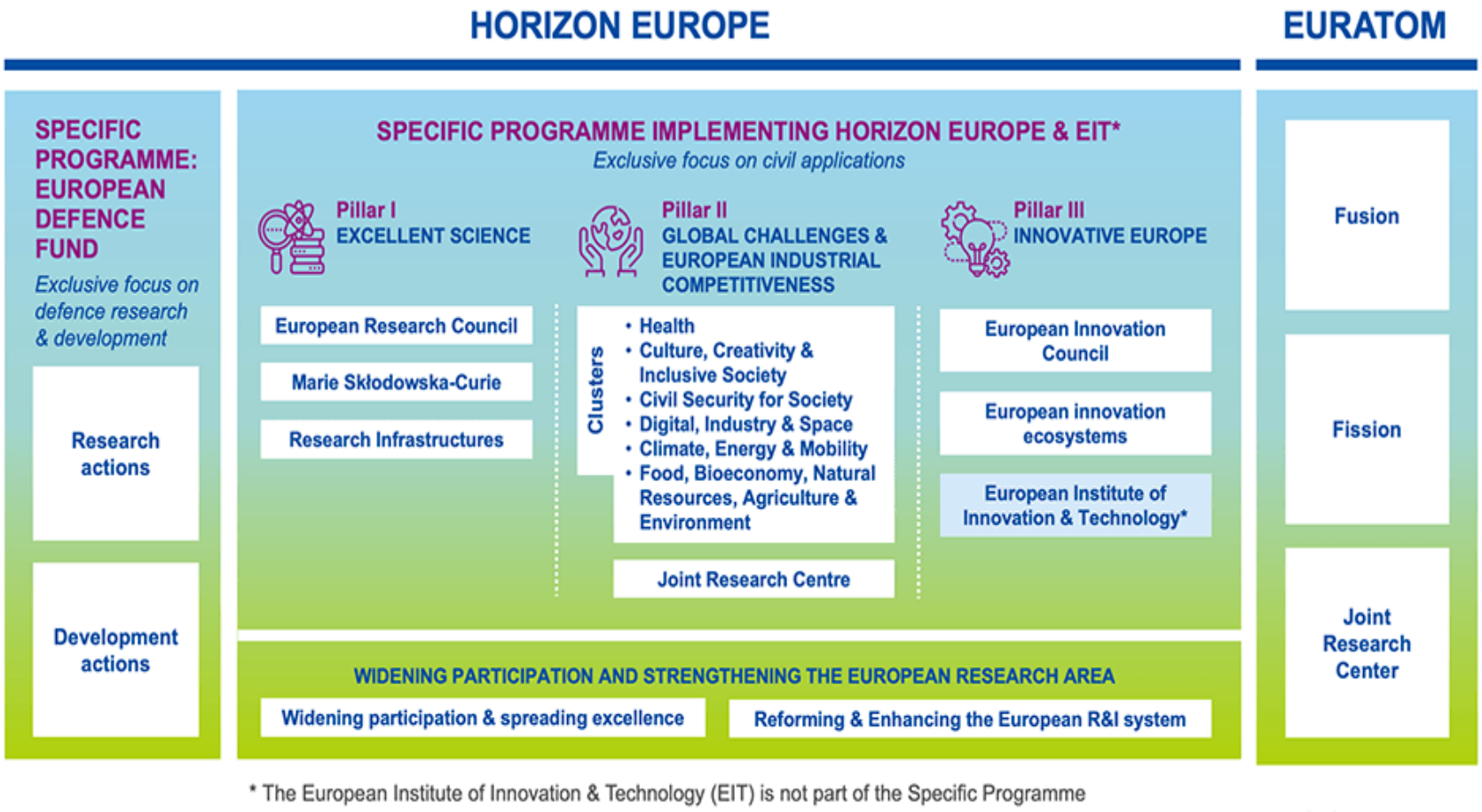
Βάγια Πιτέλη, Δίκτυο ΠΡΑΞΗ

Τι προσπαθεί να επιτύχει ο Ορίζοντας Ευρώπη

Μέσω της έρευνας και της καινοτομίας



Δομή του νέου Προγράμματος – Πλαίσιο Horizon Europe

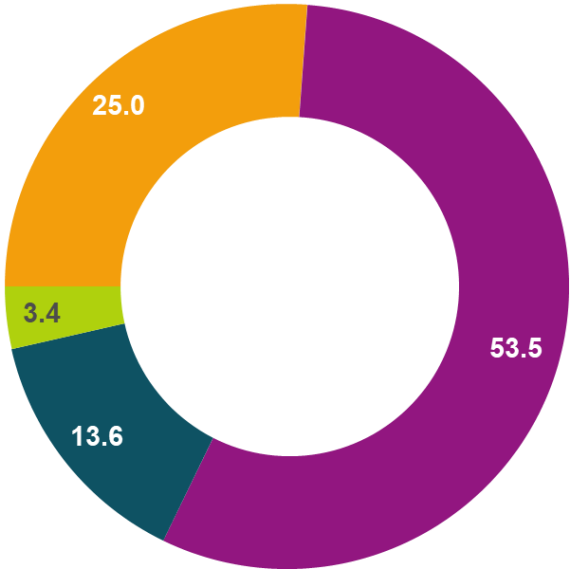


* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme

Τελικός προϋπολογισμός: **€ 95,5 δισ.**

Horizon Europe Budget: €95.5 billion (2021-2027)

(including €5.4 billion from NGEU – Next Generation Europe – programme of EU for Recovery from COVID-19 crisis)

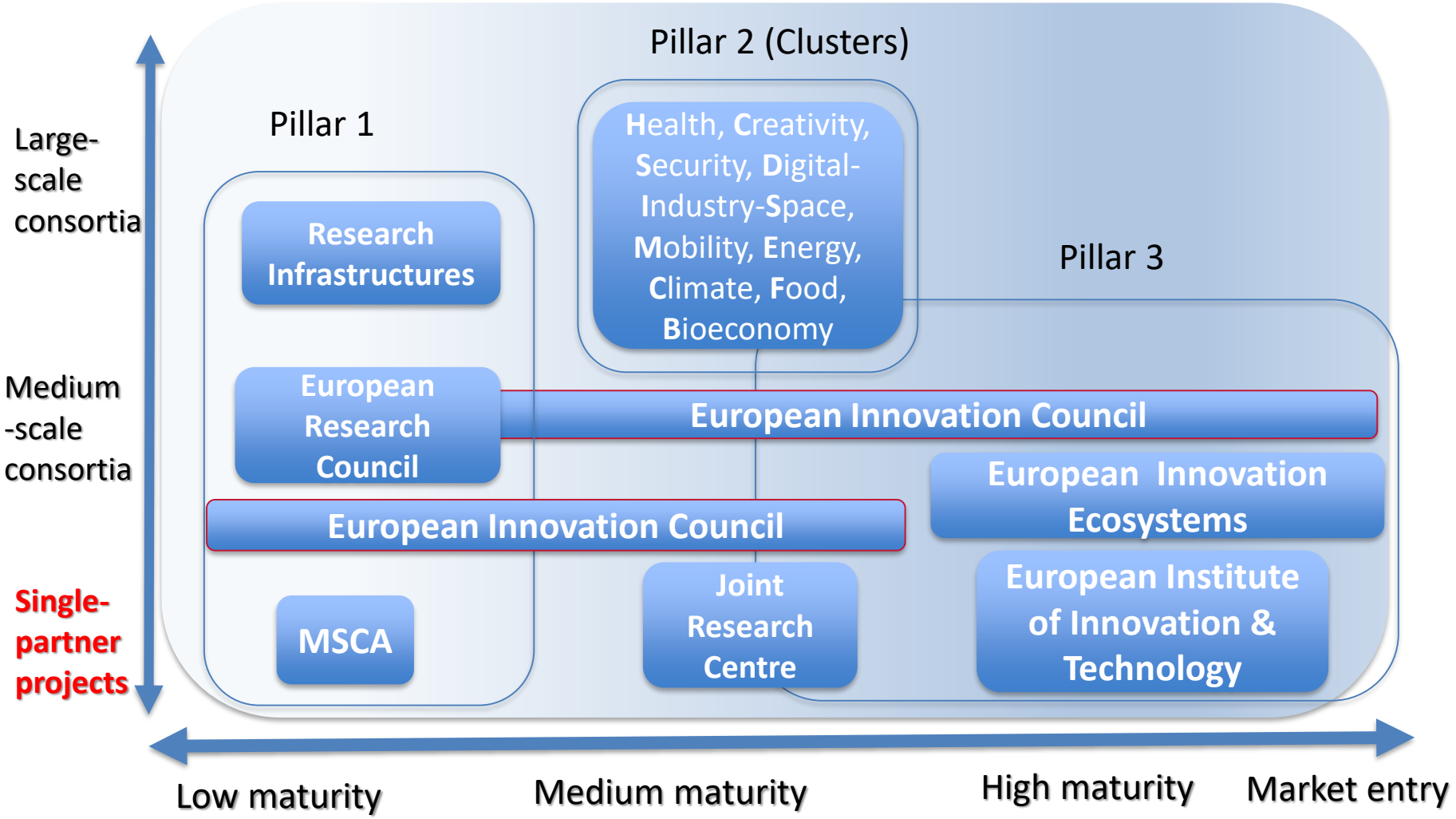


Political agreement December 2020

€ billion in current prices

- Excellent Science
- Global challenges and European ind. comp.
- Innovative Europe
- Widening Part and ERA

Βασικός προσανατολισμός



Πυλώνας 1: Επιστημονική Αριστεία

Pillar I

EXCELLENT SCIENCE:

reinforcing and extending the **excellence of the Union's science base**

European Research Council

Frontier research by the best researchers and their teams

€16 billion

Marie Skłodowska-Curie Actions

Equipping researchers with new knowledge and skills through mobility and training

€6.6 billion

Research Infrastructures

Integrated and inter-connected world-class research infrastructures

€2.4 billion

ERC Funding Schemes

European Research Council
Established by the European Commission

Starting Grant

Size of the grant: up to €1.5 million + up to €1 million
Duration: up to 5 years
2-7 years of experience since completion of their PhD

Consolidator Grant

Size of the grant: up to €2 million + up to €1 million
Duration: up to 5 years
7-12 years of experience since completion of their PhD

Advanced Grant

Size of the grant: up to €2.5 million + up to €1 million
Duration: up to 5 years
An excellent scientific track record of recognized achievements in the last 10 years

MSCA in Horizon 2020 and Horizon Europe

H2020	Horizon Europe
ITN, Innovative Training Networks	• **Doctoral Networks (DN):** Doctoral programmes in and outside academia incl. joint & industrial doctorates
IF, Individual Fellowships	• **Postdoctoral Fellowships (PF):** Support to excellent postdoctoral researchers
RISE, Research and Innovation Staff Exchange	• **Staff Exchanges (SE):** support to research and innovation staff exchanges
COFUND, Co-finances of regional, national and international programmes	• **COFUND:** co-funding doctoral and postdoctoral programmes
NIGHT, **Researchers ' Night**	• **MSCA and Citizens:** Public outreach events (Night)

Research Infrastructures

Research Infrastructures include:

- *major scientific equipment* or set of instruments,
- *knowledge-based resources* such as collections, archives or scientific data,
- *e-infrastructures*, such as data and computing systems, and communication networks
- and any other entities of a unique nature **essential to achieve excellence** in research and innovation

They can be "**Single-sited**", "**distributed**" or "**virtual**"

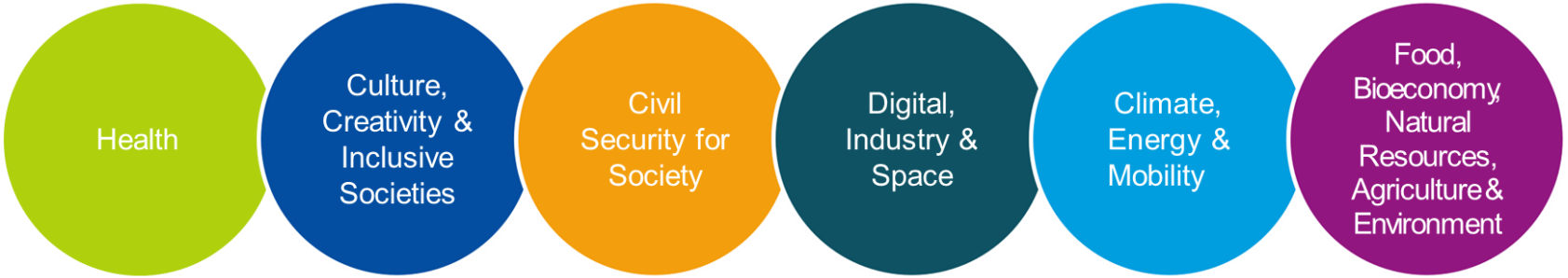
When relevant, research infrastructures may be used **beyond research**, e.g. for education or public services.

Πυλώνας 2: Παγκόσμιες Προκλήσεις και Ανταγωνιστικότητα της Βιομηχανίας

Pillar II - Clusters

GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS:

boosting **key technologies** and solutions underpinning **EU policies & Sustainable Development Goals** (6 clusters and JRC – non-nuclear direct actions)



€53.5 billion

Πυλώνας 2: Παγκόσμιες Προκλήσεις και Ανταγωνιστικότητα της Βιομηχανίας

Pillar II

Budget for clusters & for JRC

in current prices

Cluster 1	**Health**	**€8.246 billion** (including €1.35 billion from NGEU)
Cluster 2	**Culture, Creativity & Inclusive Societies**	**€2.280 billion**
Cluster 3	**Civil Security for Society**	**€1.596 billion**
Cluster 4	**Digital, Industry & Space**	**€15.349 billion** (including €1.35 billion from NGEU)
Cluster 5	**Climate, Energy & Mobility**	**€15.123 billion** (including €1.35 billion from NGEU)
Cluster 6	**Food, Bioeconomy, Natural Resources, Agriculture & Environment**	**€8.952 billion**
	JRC (non-nuclear direct actions)	**€1.970 billion**

Clusters are including a budget for Partnerships and Missions
NGEU is Next Generation EU programme – Recovery Fund

Cluster 1: Health

Aim

- The aims of this cluster include improving and protecting the health and well-being of citizens of all ages by generating new knowledge, developing innovative solutions and integrating where relevant a gender perspective to prevent, diagnose, monitor, treat and cure diseases.

Areas of intervention

1. Health throughout the life course
2. Environmental and social health determinants
3. Non-communicable and rare diseases
4. Infectious diseases including poverty-related and neglected diseases
5. Tools, technologies and digital solutions for health and care including personalised medicine
6. Health care systems

Cluster 1: Health

Destinations

- Staying healthy in a rapidly changing society
- Living and working in a health-promoting environment
- Tackling diseases and reducing disease burden
- Ensuring access to innovative, sustainable and high-quality health care
- Unlocking the full potential of new tools, technologies and digital
- Maintaining an innovative, sustainable and globally competitive health-related industry

Cluster 1: Health

Topics in the 2022 Call for Proposals

- HORIZON-HLTH-2022-TOOL-11-01: Optimising effectiveness in patients of existing prescription drugs for major diseases (except cancer) with the use of biomarkers
  - *Type of Action:* Research and Innovation Action
  - *Budget:* 10 million Euros
  - Deadline: 21 April 2022

- HORIZON-HLTH-2022-DISEASE-07-02: Pandemic preparedness
  - *Type of Action:* Research and Innovation Action
  - *Budget:* 3 million Euros
  - Deadline: 21 April 2022

- HORIZON-HLTH-2022-STAYHLTH-02-01: Personalised blueprint of chronic inflammation in health-to-disease transition
  - *Type of Action:* Research and Innovation Action
  - *Budget: 7* million Euros
  - Deadline: 21 April 2022

Cluster 2: Culture, creativity and inclusive society

Aim

- This cluster aims to strengthen European democratic values, including rule of law and fundamental rights, safeguarding our cultural heritage, and promoting socio-economic transformations that contribute to inclusion and growth.

Destinations

- Innovative Research on Democracy and Governance
- Innovative Research on the European Cultural Heritage and the Cultural and Creative Industries
- Innovative Research on Social and Economic Transformations

Cluster 2: Culture, creativity and inclusive society

Topics in the 2022 Call for Proposals

- HORIZON-CL2-2022-DEMOCRACY-01-09: Global governance for a world in transition: Norms, institutions, actors
  - *Type of Action:* Research and Innovation Action
  - *Budget:* 9 million Euros
  - Deadline: 20 April 2022

- HORIZON-CL2-2022-HERITAGE-01-01: Safeguarding endangered languages in Europe
  - *Type of Action:* Coordination and Support Action
  - *Budget:* 3 million Euros
  - Deadline: 20 April 2022

- HORIZON-CL2-2022-TRANSFORMATIONS-01-05: Gender and social, economic and cultural empowerment
  - *Type of Action:* Research and Innovation Action
  - *Budget: 9* million Euros
  - Deadline: 20 April 2022

Cluster 3: Civil Security for Society

- Cluster 3 WP responds to the challenges arising from persistent security threats, including cybercrime, as well as natural and man-made disasters.

- It builds on lessons learnt from Covid-19 crisis (prevention, mitigation, preparedness and capacity building for crises).

Destinations

- Better protect the EU and its citizens against Crime and Terrorism
- Effective management of EU external borders
- Resilient infrastructure
- Increased Cybersecurity
- A Disaster-Resilient Society for Europe
- Strengthened Security Research and Innovation

Cluster 3: Civil Security for Society

Forthcoming calls!

Topics in the 2022 Call for Proposals

- HORIZON-CL3-2022-INFRA-01-01: Nature-based Solutions integrated to protect local infrastructure
  - *Type of Action:* Research and Innovation Action
  - *Budget:* 5 million Euros
  - Deadline: 23 November 2022

- HORIZON-CL3-2022-DRS-01-04: Better understanding of citizens' behavioural and psychological reactions in the event of a disaster or crisis situation
  - *Type of Action:* Research and Innovation Action
  - *Budget:* 10 million Euros
  - Deadline: 23 November 2022

- HORIZON-CL3-2022-CS-01-01: Improved monitoring of threats, intrusion detection and response in complex and heterogeneous digital systems and infrastructures
  - *Type of Action:* Innovation Action
  - *Budget: 21* million Euros
  - Deadline: 16 November 2022

Cluster 4: Digital, Industry and Space

Aim

- This cluster aims to shape competitive and trusted technologies for a European industry with global leadership in key areas, enabling production and consumption to respect the boundaries of our planet, and maximising the benefits for all parts of society in the variety of social, economic and territorial contexts in Europe.

Destinations

- Climate neutral, circular and digitised production
- Increased autonomy in key strategic value chains for resilient industry
- World leading data and computing technologies
- Digital and emerging technologies for competitiveness and fit for the Green Deal
- Open strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data
- A human-centred and ethical development of digital and industrial technologies

Cluster 4: Digital, Industry and Space

Forthcoming calls!

Topics in the 2022 Call for Proposals

- HORIZON-CL4-2022-DIGITAL-EMERGING-02-05: AI, Data and Robotics for Industry optimisation (including production and services) (AI, Data and Robotics Partnership)
  - *Type of Action:* Innovation Action
  - *Budget:* 19 million Euros
  - Deadline: 16 November 2022

- HORIZON-CL4-2022-DIGITAL-EMERGING-02-20: 2D-material-based composites, coatings and foams
  - *Type of Action:* Innovation Action
  - *Budget:* 9 million Euros
  - Deadline: 16 November 2022

- HORIZON-CL4-2022-DIGITAL-EMERGING-02-17: New generation of advanced electronic and photonic 2D materials-based devices, systems and sensors
  - *Type of Action:* Research and Innovation Action
  - *Budget:* 16,5 million Euros
  - Deadline: 16 November 2022

Cluster 5: Climate, Energy and Mobility

Aim

- This cluster aims to fight climate change by better understanding its causes, evolution, risks, impacts and opportunities, and by making the energy and transport sectors more climate and environment-friendly, more efficient and competitive, smarter, safer and more resilient.

Destinations

- Climate sciences and responses for the transformation towards climate neutrality
- Cross-sectoral solutions for the climate transition
- Sustainable, secure and competitive energy supply
- Efficient, sustainable and inclusive energy use
- Clean and competitive solutions for all transport modes
- Safe, Resilient Transport and Smart Mobility services for passengers and goods

Cluster 5: Climate, Energy and Mobility

Forthcoming calls!

Topics in the 2022 Call for Proposals

- HORIZON-CL5-2022-D2-01-02: Interface and electron monitoring for the engineering of new and emerging battery technologies (Batteries Partnership)
  - *Type of Action:* Research and Innovation Action
  - *Budget:* 10 million Euros
  - Deadline: 6 September 2022

- HORIZON-CL5-2022-D3-03-08: Development of digital solutions for existing hydropower operation and maintenance
  - *Type of Action:* Research and Innovation Action
  - *Budget:* 9 million Euros
  - Deadline:10 January 2023

- HORIZON-CL5-2022-D6-02-04: Accelerating the deployment of new and shared mobility services for the next decade
  - *Type of Action:* Innovation Action
  - *Budget:* 20 million Euros
  - Deadline: 6 September 2022

Cluster 6: Food, Bioeconomy, Natural Resources, Agriculture and Environment

Aim

This cluster aims at reducing environmental degradation, halting and reversing the decline of biodiversity on land, inland waters and sea and better managing natural resources through transformative changes of the economy and society in both urban and rural areas.

Areas of Intervention

1. Environmental observation
2. Biodiversity and natural resources
3. Agriculture, forestry and rural areas
4. Seas, oceans and inland waters
5. Food systems
6. Bio-based innovation systems in the EU
7. Circular systems

Cluster 6: Food, Bioeconomy, Natural Resources, Agriculture and Environment

Destinations

- Biodiversity and ecosystem services
- Fair, healthy and environment-friendly food systems from primary production to consumption
- Circular economy and bioeconomy sectors
- Clean environment and zero pollution
- Land, ocean and water for climate action
- Resilient, inclusive, healthy and green rural, coastal and urban communities
- Innovative governance, environmental observations and digital solutions in support of the Green Deal

Cluster 6: Food, Bioeconomy, Natural Resources, Agriculture and Environment

Topics in the 2022 Call for Proposals INDICATIVE

- **HORIZON-CL6-2021-FARM2FORK-01-01:** Risk assessment of new low risk pesticides
  - *Destination:* Fair, healthy and environment-friendly food systems from primary production to consumption
  - *Type of Action:* Research and Innovation Action
  - *Budget: 7* million Euros

- **HORIZON-CL6-2022-FARM2FORK-01-03:** Enhancing biosecurity in terrestrial livestock production
  - *Destination:* Fair, healthy and environment-friendly food systems from primary production to consumption
  - *Type of Action: Research and* Innovation Action
  - *Budget:* 5 million Euros

A climate-resilient Europe: Prepare Europe for climate disruptions and accelerate the transformation to a climate resilient and Just Europe

Mission Starfish 2030: Restore our oceans and Water

Adaptation to climate change, including societal transformation

Conquering Cancer: Mission Possible

Healthy oceans, seas, coastal and inland waters

Mission areas

Cancer

Climate-neutral and smart cities

Soil health and food

Caring for Soil is Caring for Life

100 Climate Neutral and Smart Cities by 2030

Missions – calls (1)

Mission: Adaptation to climate change

- Call - Better prepared regional and local authorities to adapt to climate change
- Call - Research and Innovation actions in support of the implementation of the Adaptation to Climate Change Mission

Mission: Cancer

- Call - Preparing UNCAN.eu, a European initiative to understand cancer
- Call - Research and Innovation actions supporting the implementation of the Mission on Cancer

Mission: Restore our Ocean, seas and waters by 2030

- Call - Preparation for deployment of 'lighthouse demonstrators' and solution scale ups and cross-cutting citizen and stakeholder involvement
- Call - Protect and restore marine and fresh water ecosystems and biodiversity
- Call - Prevent and eliminate pollution of our ocean, seas and waters
- Call - Sustainable, carbon-neutral and circular Blue economy
- Call - Mission Enabling activities: Digital knowledge system, public mobilisation and engagement, dynamic investment ecosystem

Missions – calls (2)

Mission: Climate neutral and smart cities

- Call - Supporting the transition towards climate neutrality within cities
- Call - Research and Innovation actions for support the implementation of the Climate-neutral and Smart Cities Mission
  - HORIZON-MISS-2022-CIT-01-01: Designing inclusive, safe, affordable and sustainable urban mobility
    - *Type of Action:* Innovation Action
    - *Budget:* 42 million Euros
    - Deadline: 6 September 2022

Mission: Soil health and food

- Call - Preparing the ground for healthy soils: building capacities for engagement, outreach and knowledge
- Call - Research and Innovation and other actions to support the implementation of a mission in the area of Soil health and Food

Πυλώνας 3: Καινοτόμος Ευρώπη

Pillar III

INNOVATIVE EUROPE:

stimulating **market-creating breakthroughs** and **ecosystems** conducive to innovation

European Innovation Council

Support to innovations with breakthrough and market creating potential

European innovation ecosystems

Connecting with regional and national innovation actors

European Institute of Innovation and Technology (EIT)

Bringing key actors (research, education and business) together around a common goal for nurturing innovation

The budget: **€10.6 billion**, incl. up to **€527 million** for ecosystems (including NGEU – Recovery Fund parts dedicated to EIC).

circa **€3 billion**

Πυλώνας 3: Ευρωπαϊκό Συμβούλιο Καινοτομίας (EIC)

European Innovation Council

Support to innovations with breakthrough and disruptive nature and scale up potential that are too risky for private investors **(70% of the budget earmarked for SMEs)**

European Innovation Council – a one-stop-shop

- **Helping researchers and innovators create markets of the future, leverage private finance, scale up theircompanies**
- **Innovation centric, risk taking & agile, pro-active management and follow up**
- **Mostly 'bottom up', but also targeting strategic challenges**
- **EIC Programme Managers to develop visions for breakthroughs and steer portfolios**

Complementary instruments bridging the gap from idea to market

PATHFINDER	TRANSITION	ACCELERATOR
R&I grants (from early technology to proof of concept)	**R&I grants** (proof of concept to pre-commercial)	**Grants & investment (via EIC Fund) for single SMEs & start-ups** (from pre-commercial to market & scale-up)

European Innovation Ecosystems

Innovation **performance**	• **Strong research performance not translated** into innovation • **Lack of breakthrough/ disruptive innovations** that create new markets (+public/social innovation)
Innovation **funding**	Financing gaps (2 "valleys of death") in • **Transition** from lab to enterprise/startup • **Scaling up** for high-risk innovative start-ups
Innovation ecosystem **fragmentation**	• Many national & local ecosystems (**variety**), but **fragmented at European** level • Need to **include all actors, territories and all talent** (especially female)

Ευρωπαϊκό Ινστιτούτο Τεχνολογίας και Καινοτομίας (EIT)

Οριζόντιες δράσεις

Widening Participation & Strengthening the European Research Area (ERA):

Widening Participation and Spreading Excellence

- Teaming, Twinning, ERA Chairs,
- European Cooperation in Science and Technology (COST)
- Boosting National Contact Points' (NCPs) activities, pre-proposal checks and advice
- Brain circulation
- Excellence initiatives;
- Possibility for entities from widening countries to join already selected collaborative R&I actions
- Recognition of participation
- Matchmaking services

€2.96 billion

Reforming and enhancing the EU R&I system

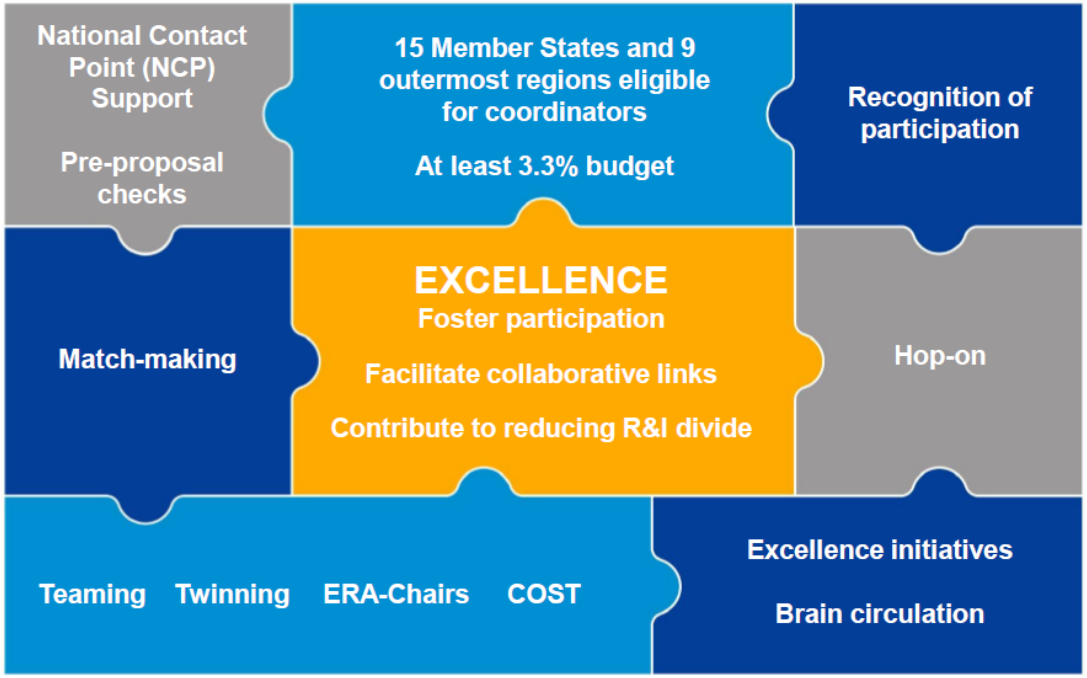
- Strengthening the evidence base for R&I policy
- Foresight
- Support for policy makers to the ERA development
- Support to national R&I policy reform, including Policy Support Facility
- Attractive researcher careers and links with higher education
- Open science, citizen science and science communication
- Gender equality
- Ethics and integrity
- Support to international cooperation
- Scientific input to other policies
- Support to the Programme implementation
- Support for National Contact Points
- Support to dissemination & exploitation

€0.44 billion

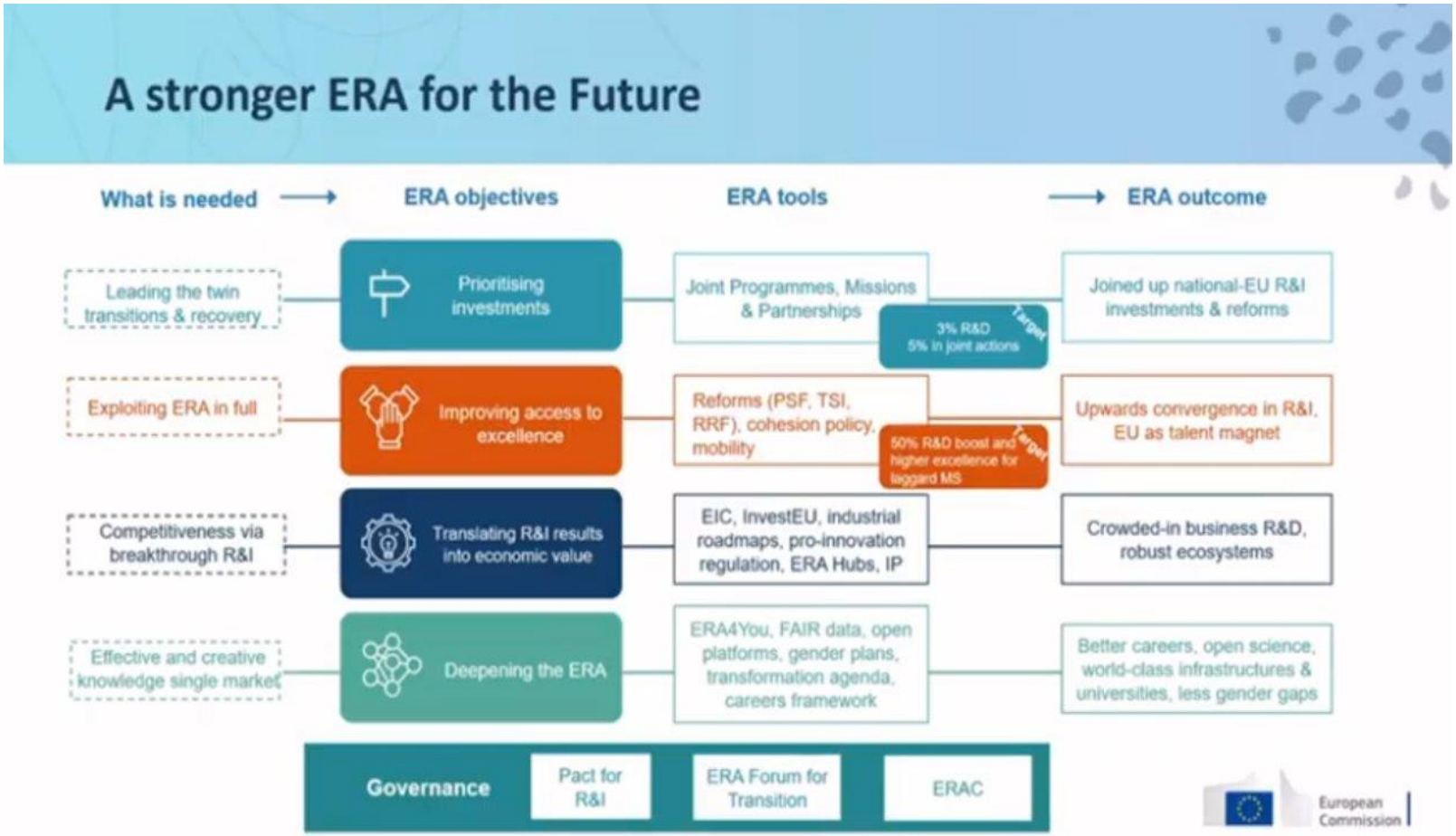
Διεύρυνση της συμμετοχής και επέκταση της αριστείας

Νέο status της Ελλάδας-χώρα 'widening'- νέες ευκαιρίες

Widening participation/spreading excellenc



Ο νέος Ευρωπαϊκός Χώρος Έρευνας και ο Ορίζοντας Ευρώπη



Νέα διαδικτυακή πύλη για τον Ορίζοντα Ευρώπη από το Δίκτυο ΠΡΑΞΗ

http://horizoneurope.gr/

Χρήσιμοι σύνδεσμοι

- Horizon Europe: https://ec.europa.eu/info/horizon-europe_en
- R&I Missions (incl. reports): https://ec.europa.eu/info/horizon-europe/missions-horizon-europe_en
- Partnerships for R&I: https://ec.europa.eu/info/horizon-europe/european-partnerships-horizon-europe_en
- Open science policy: https://ec.europa.eu/info/research-and-innovation/strategy/goals-research-and-innovation-policy/open-science_en
- EU approach to sustainable development: https://ec.europa.eu/info/strategy/international-strategies/sustainable-development-goals/eu-holistic-approach-sustainable-development_en
- European Innovation Council: https://ec.europa.eu/research/eic/index.cfm
- European Institution of Innovation and Technology: https://eit.europa.eu/
- Knowledge and Innovation Communities: https://eit.europa.eu/our-communities/eit-innovation-communities
- European Open Science Cloud: https://eosc-portal.eu/

Σας ευχαριστώ για την προσοχή σας!

Βάγια Πιτέλη

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