

Commission proposal for **Horizon Europe**

THE NEXT EU RESEARCH & INNOVATION
PROGRAMME (2021 – 2027)

#HorizonEU

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ETIP SNET - Central Region Workshop

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Horizon Europe

is the Commission proposal for a **€ 100 billion** research and innovation funding programme for seven years (2021-2027)



to strengthen the EU's scientific and technological bases



to boost Europe's innovation capacity, competitiveness and jobs

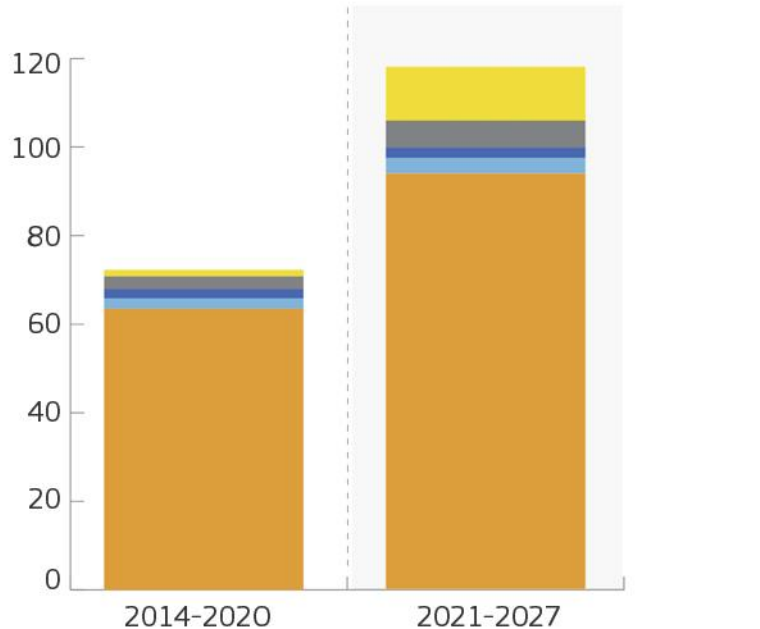


to deliver on citizens' priorities and sustain our socio-economic model and values

€ 4.1 billion are proposed to be allocated for defence research, in a separate proposal for a European Defence Fund

The next long-term EU budget:

Investing in the future

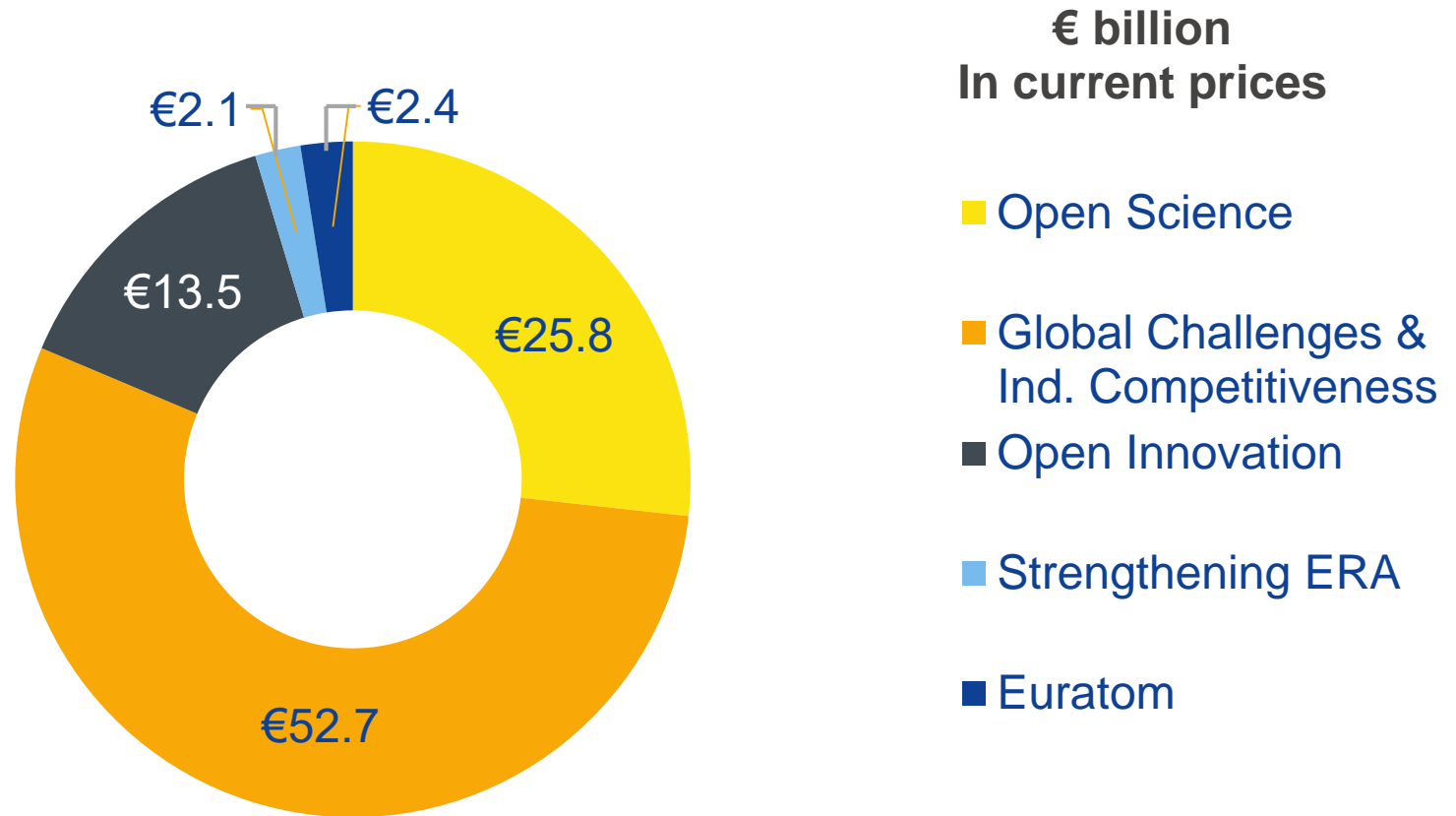


Building on the success of the EU's past flagship research and innovation programmes, the Commission proposes to **increase investment in research-innovation and digital** by allocating **€ 114.2 billion** for the future Multiannual Financial Framework.

- Digital Europe Programme & Connecting Europe Facility - Digital
- International Thermonuclear Experimental Reactor (ITER)
- Euratom Research and Training Programme
- Innovation Window InvestEU Fund
- Horizon Europe

Source: European Commission
Note: Compared to the Multiannual Financial Framework 2014-2020 at EU-27 (estimate)

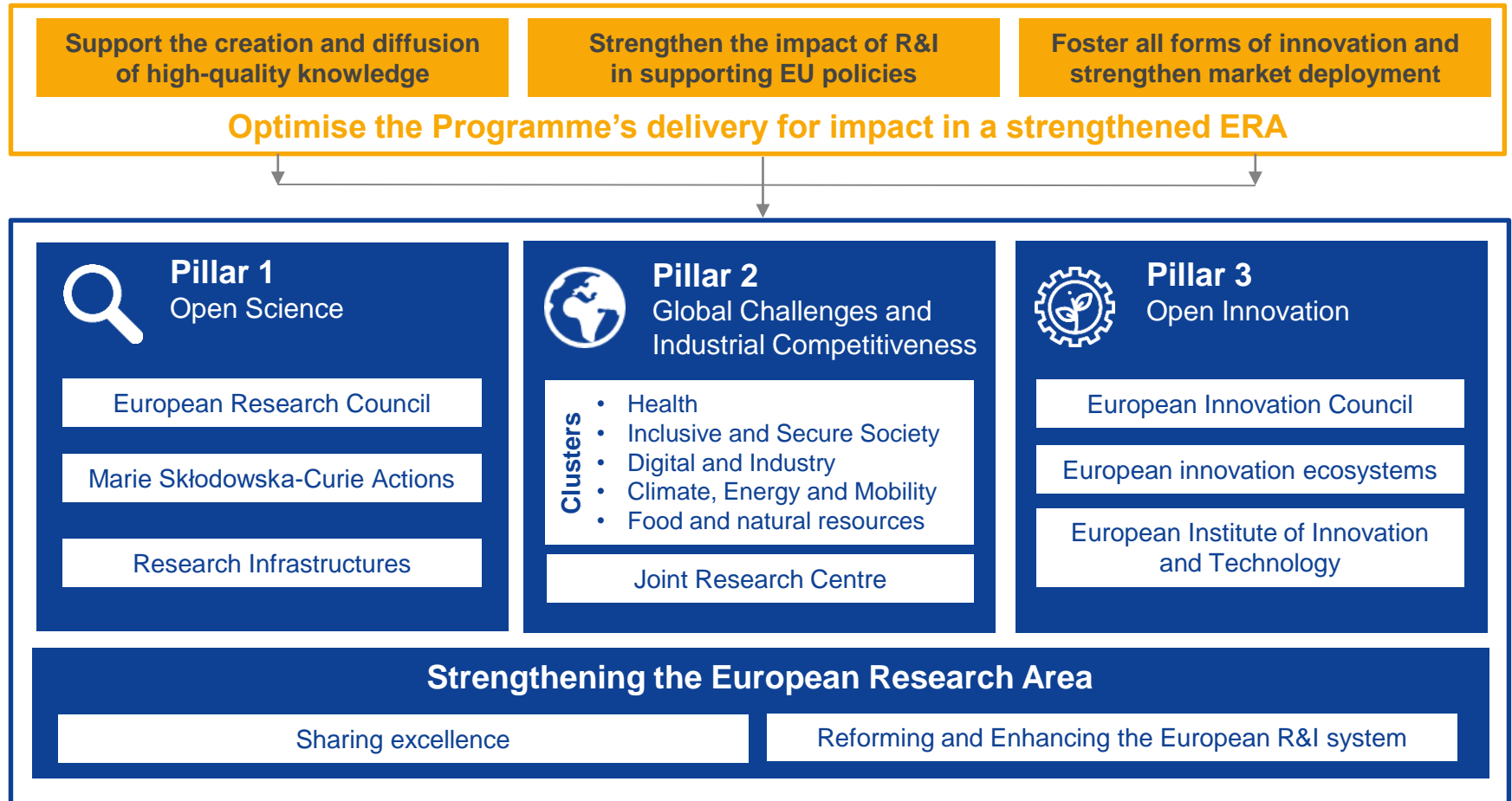
Budget: €100 billion* (2021-2027)



* This envelope includes EUR 3.5 billion allocated under the InvestEU Fund.

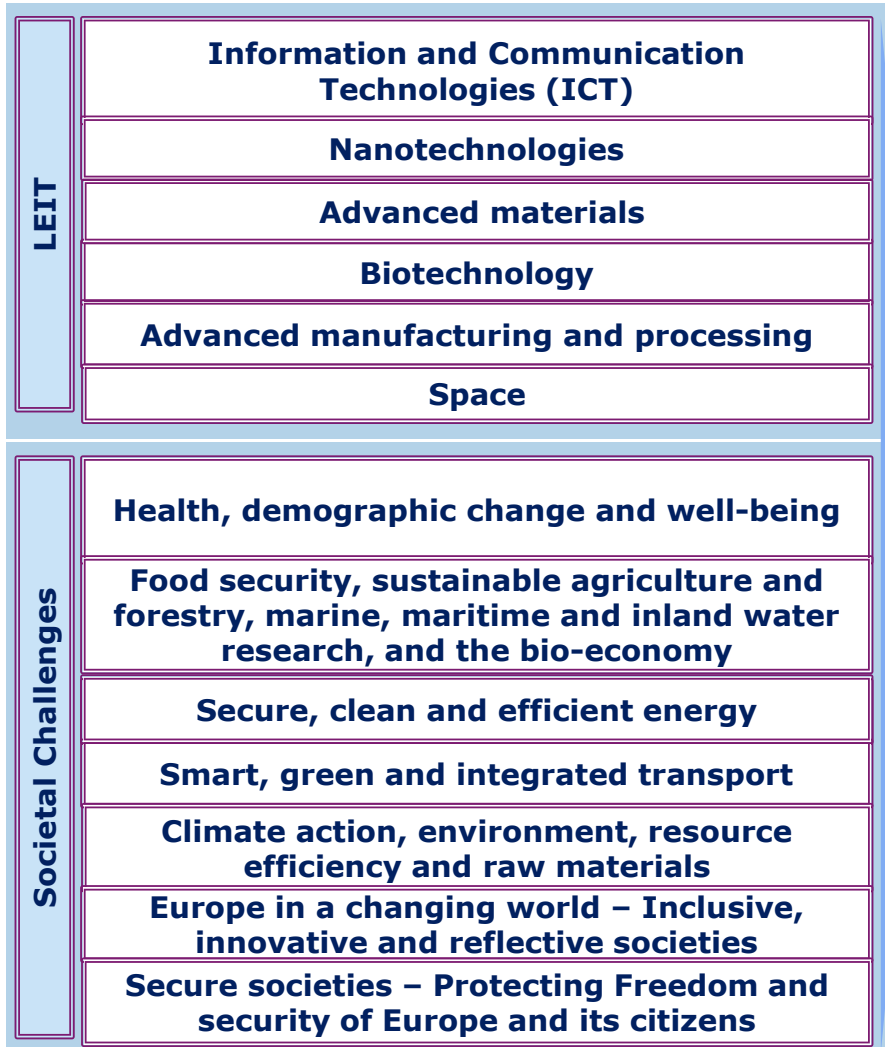
Horizon Europe: evolution not revolution

Specific objectives of the Programme



From Horizon 2020 to Horizon Europe

- From 13 parts
 - From 69 activity lines
-
- to 5 clusters
 - to 39 intervention areas



Lessons Learned

from Horizon 2020 Interim Evaluation



Support breakthrough innovation



Create more impact through mission-orientation and citizens' involvement



Strengthen international cooperation



Reinforce openness



Rationalise the funding landscape



Key Novelties

in Horizon Europe

European Innovation Council

R&I Missions

Extended association possibilities

Open science policy

New approach to Partnerships



European Innovation Council

Support to innovations with breakthrough and disruptive nature and scale up potential that are too risky for private investors.

**European
Innovation
Council**

Helping innovators create markets of the future, leverage private finance, scale up their companies, Innovation centric, risk taking & agile, proactive management and follow up

Two complementary instruments bridging the gap from idea to investable project

Pathfinder: grants
(from early technology
to pre-commercial)

Accelerator:
grants & blended finance
(from pre-commercial
to market & scale-up)



R&I Missions

R&I Missions

Relating EU's research and innovation better to society and citizens' needs; with strong visibility and impact

A mission is a portfolio of actions intended to achieve **a bold and inspirational as well as measurable goal** within a set timeframe, with impact for science and technology, society and citizens that goes beyond individual actions

Horizon Europe proposal defines mission characteristics and elements of governance

Specific missions will be **co-designed with Member States, stakeholders and citizens** and programmed within the Global Challenges and Industrial Competitiveness pillar (drawing on inputs from other pillars)

Pillar 2

Global Challenges & Industrial Competitiveness:

boosting key technologies and solutions underpinning EU policies & Sustainable Development Goals

Clusters implemented through usual calls, missions & partnerships	Budget (€ billion)
Health	€ 7.7
Inclusive and Secure Societies	€ 2.8
Digital and Industry	€ 15
Climate, Energy and Mobility	€ 15
Food and Natural Resources	€ 10
Joint Research Centre supports European policies with independent scientific evidence & technical support throughout the policy cycle	€ 2.2

Clusters in 'Global Challenges and Industrial Competitiveness'

Clusters	Areas of intervention	
Health	<ul style="list-style-type: none"> * Health throughout the life course * Non-communicable and rare diseases * Tools, technologies and digital solutions for health and care 	<ul style="list-style-type: none"> * Environmental and social health determinants * Infectious diseases * Health care systems
Inclusive and Secure Societies	<ul style="list-style-type: none"> * Democracy * Social and economic transformations * Protection and Security 	<ul style="list-style-type: none"> * Cultural heritage * Disaster-resilient societies * Cybersecurity
Digital and Industry	<ul style="list-style-type: none"> * Manufacturing technologies * Advanced materials * Next generation internet * Circular industries * Space 	<ul style="list-style-type: none"> * Key digital technologies * Artificial intelligence and robotics * Advanced computing and Big Data * Low carbon and clean industry
Climate, Energy and Mobility	<ul style="list-style-type: none"> * Climate science and solutions * Energy systems and grids * Communities and cities * Industrial competitiveness in transport * Smart mobility 	<ul style="list-style-type: none"> * Energy supply * Buildings and industrial facilities in energy transition * Clean transport and mobility * Energy storage
Food and Natural Resources	<ul style="list-style-type: none"> * Environmental observation * Agriculture, forestry and rural areas * Food systems * Circular systems 	<ul style="list-style-type: none"> * Biodiversity and natural capital * Sea and oceans * Bio-based innovation systems

Area “Energy Systems and Grids”

- Growth of variable electricity production and shift towards more electric heating, cooling and transport -> new approaches to manage energy grids ensuring energy affordability, security and stability of supply
- Optimise smart and integrated operation of infrastructure

Broad Lines:

- ✓ Technologies and tools for electricity networks to integrate renewables and new loads (e.g. electro-mobility, heat pumps)
- ✓ Pan-European energy network approaches to management;
- ✓ Integrated approaches to match renewable energy production and consumption at local level
- ✓ Network flexibility and synergies between the different energy sources, networks, infrastructures and actors;

CLUSTER 4: Climate, Energy and Mobility

From sectors to systems – Why combining climate, energy and transport/mobility in one cluster?

- Limiting increase of global average temperature to well below 2°C (1.5°C in line with Paris Agreement goals) requires **decarbonising the energy and transport sectors**
- EU policies on energy, climate and transport closely interlinked
- **Many common challenges and opportunities** for energy and transport:
 - Better environmental performance
 - EU industrial competitiveness
 - Integration of ICT and space-based applications
 - Strong consumer-orientation
 - Infrastructure needs
- **Synergies** in many areas of mutual relevance (e.g. energy storage, electrification of transport, fuel cells and hydrogen, advanced fuels, smart combined solution for cities)

CLUSTER 4 Climate, Energy and Mobility

Key features

More **impact-focused R&I** – supporting the implementation of EU policy goals and links between fuels/electricity (supply-side) and transport (demand-side)

New **holistic / system-wide / integrated view** – e.g. focus on citizens, industry and user needs

More **synergies** across R&I areas, along the full innovation cycle:

- ❑ between thematic areas (e.g. low-emission mobility, energy & climate)
- ❑ between clusters (e.g. digital and automated mobility)
- ❑ between pillars (through wide / joint Missions)
- ❑ with other EU / funding instruments (e.g. CEF, LIFE)

Mainstreaming and thus more impact of Social Sciences & Humanities, citizen & consumer empowerment, economic & behavioural aspects, standardisation and innovation-friendly frameworks

Strategic planning to define multiannual work programmes and calls for proposals

- Transparency and stakeholder involvement
- Prioritisation and flexibility to align to political priorities
- Internal programme coherence & synergies with other programmes

Multiannual Strategic R&I Plan

- * Multiannual orientations and priorities in one document
- * Areas for partnerships and missions

Strategic discussions with Member States and European Parliament

Consultation with stakeholders

Work Programmes

Synergies with other Union programmes

Horizon Europe



Enhanced synergies

Compatibility

Harmonisation of funding rules;
flexible co-funding schemes;
pooling resources at EU level

Coherence and complementarity

Alignment of strategic priorities in
support of a common vision

Other Union Programmes, including

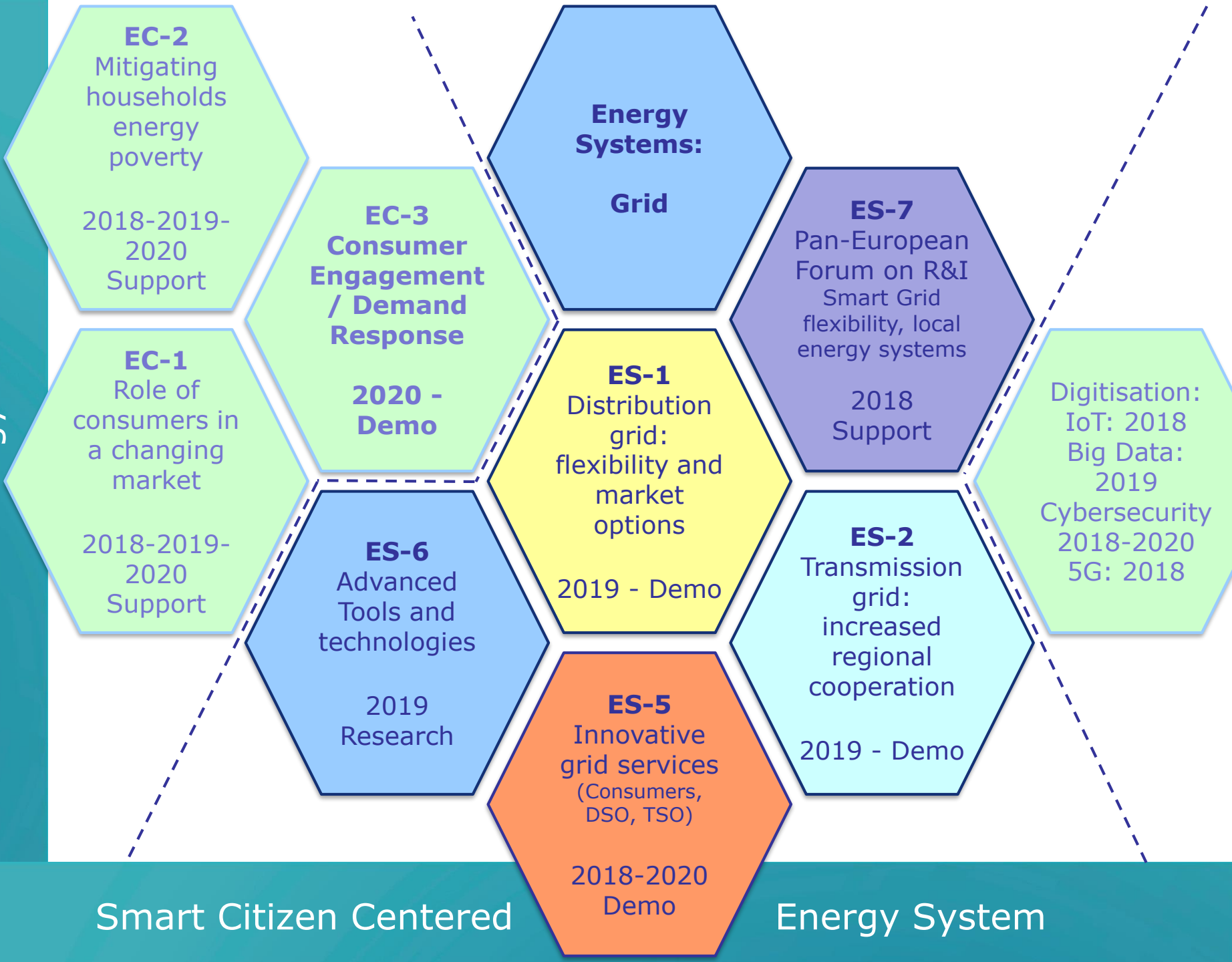
Common Agricultural Policy
ERDF
External Instrument
Maritime & Fisheries Fund
InvestEU

LIFE
Connecting Europe Facility
ESF+
Digital Europe Programme
Space Programme

Erasmus
Innovation Fund
Internal Security Fund
ESF+
Single Market Programme

Horizon 2020 - next calls

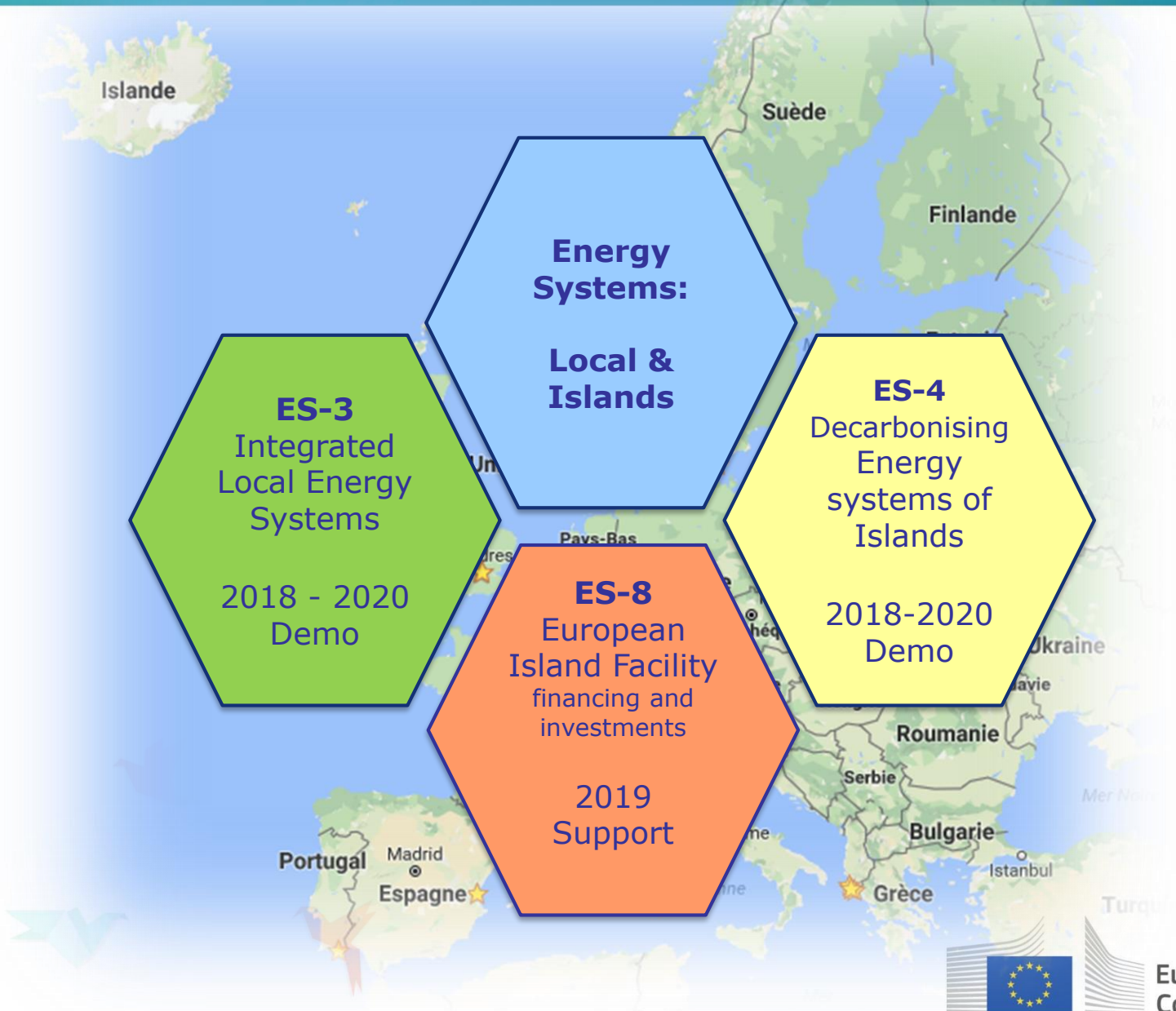
Smart and Clean Energy for Consumers



Smart Citizen Centered

Energy System

Smart Citizen Centered Energy System: Local and Islands



BRIDGE

Accelerating smart grid and storage deployment by removing barriers to innovation

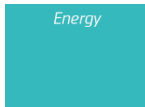


BRIDGE

- Is a **European Commission** initiative
- Gather Horizon 2020 **Smart Grid and Energy Storage** demonstration projects
- Creates a **structured view** of obstacles to innovation.
- Fosters continuous **knowledge sharing** amongst projects
- Deliver **conclusions and recommendations** with a single voice



#H2020Energy





Thank you!

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<http://ec.europa.eu/horizon-europe>