

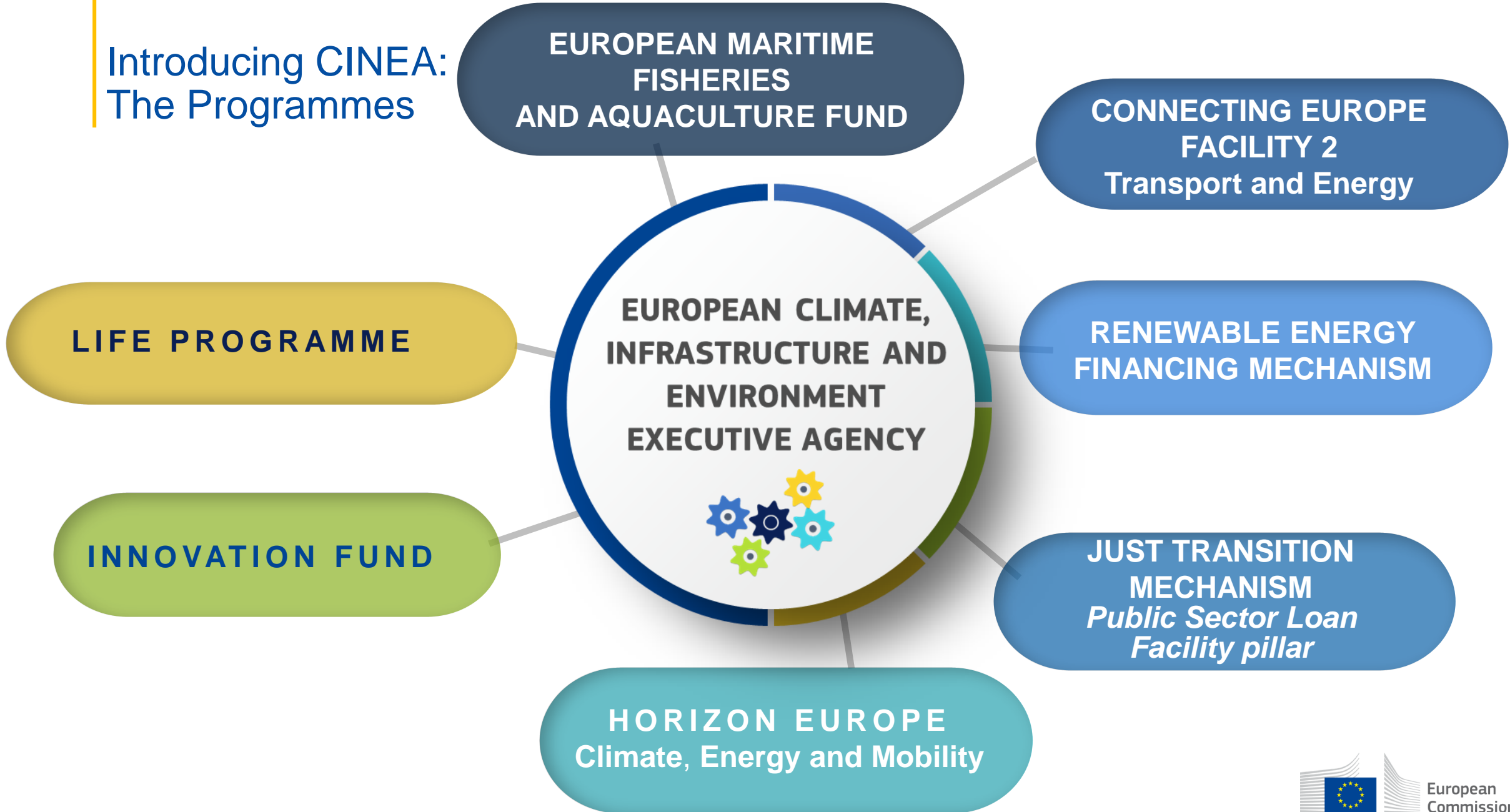


National Information Day Horizon Europe Cluster 5 Climate, Energy and Mobility

*Calls 2023-2024 in Cluster 5 (Climate, Energy and Mobility)
Mission Adaptation to Climate Change
Mission Climate Neutral and Smart Cities*

*Tereza Budnakova
Head of Unit Horizon Europe Climate
CINEA
23 November 2022*

Introducing CINEA: The Programmes

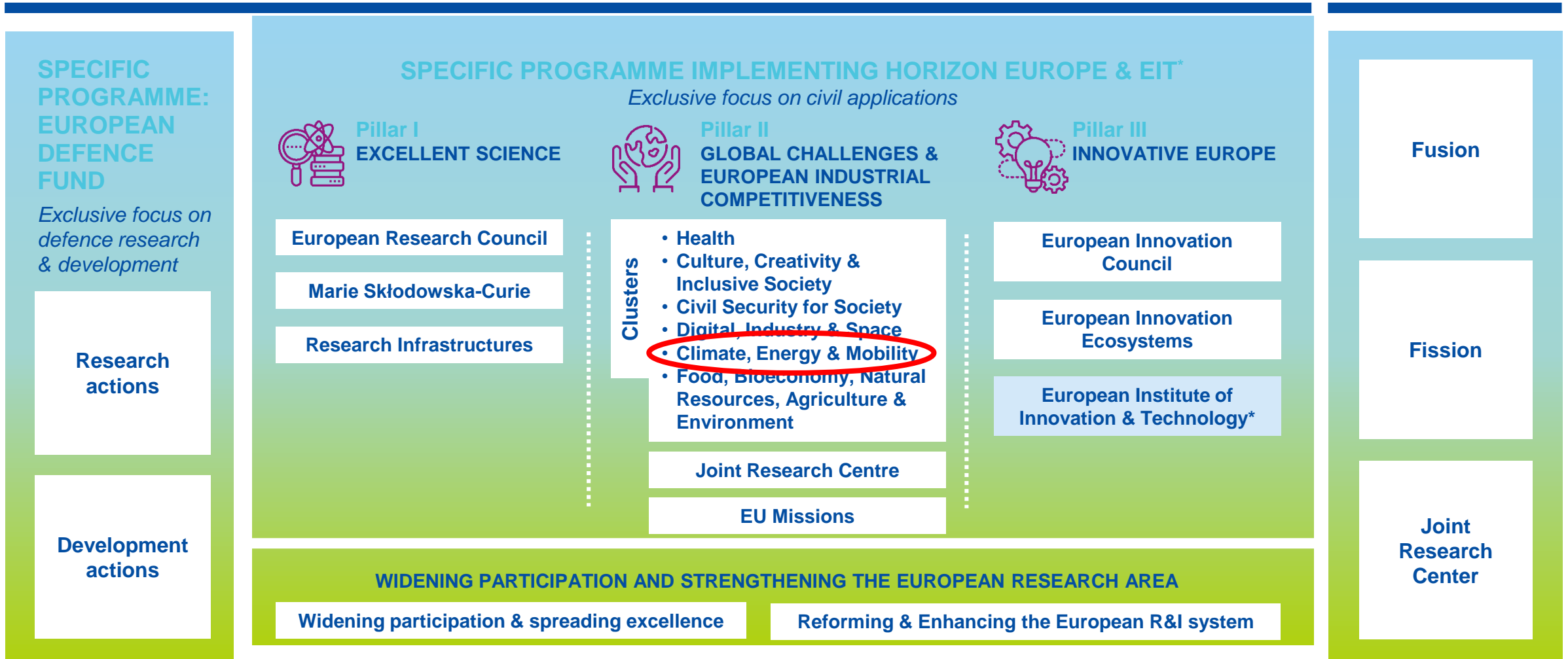


The Horizon Europe Framework Programme



HORIZON EUROPE

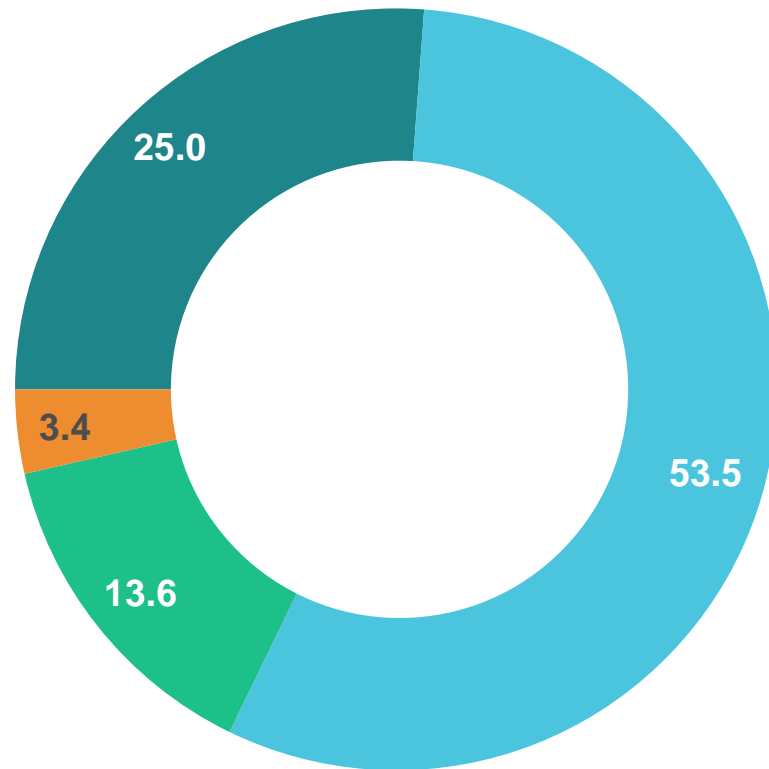
EURATOM



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

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

including €5.4 bn from NGEU (Next Generation Europe) = EU funding instrument for Recovery from COVID-19 crisis



Political agreement December 2020

€ billion in current prices

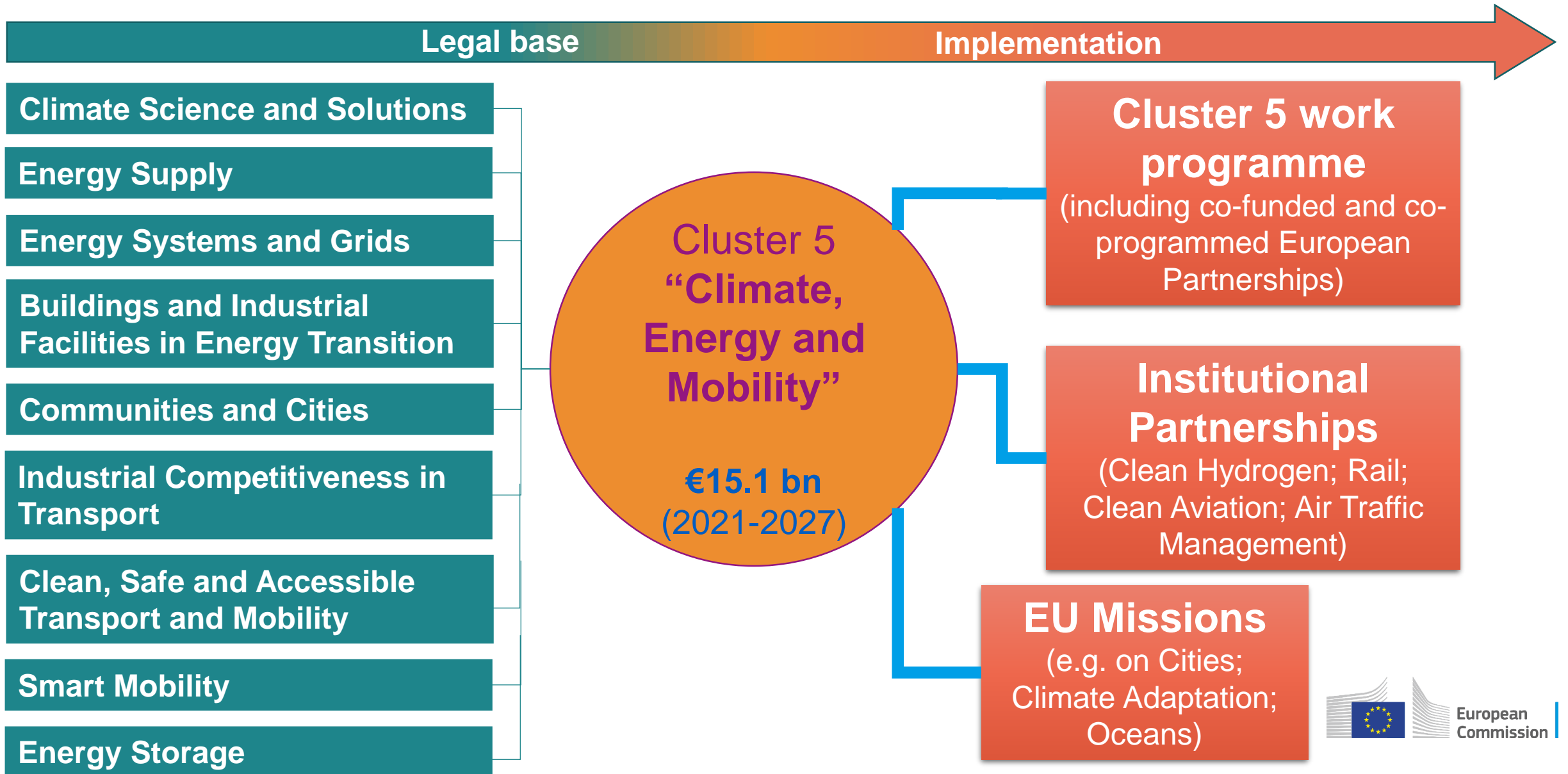
- Excellent Science
- Global challenges and European ind. comp.
- Innovative Europe
- Widening Part and ERA

THE HORIZON EUROPE
FRAMEWORK PROGRAMME

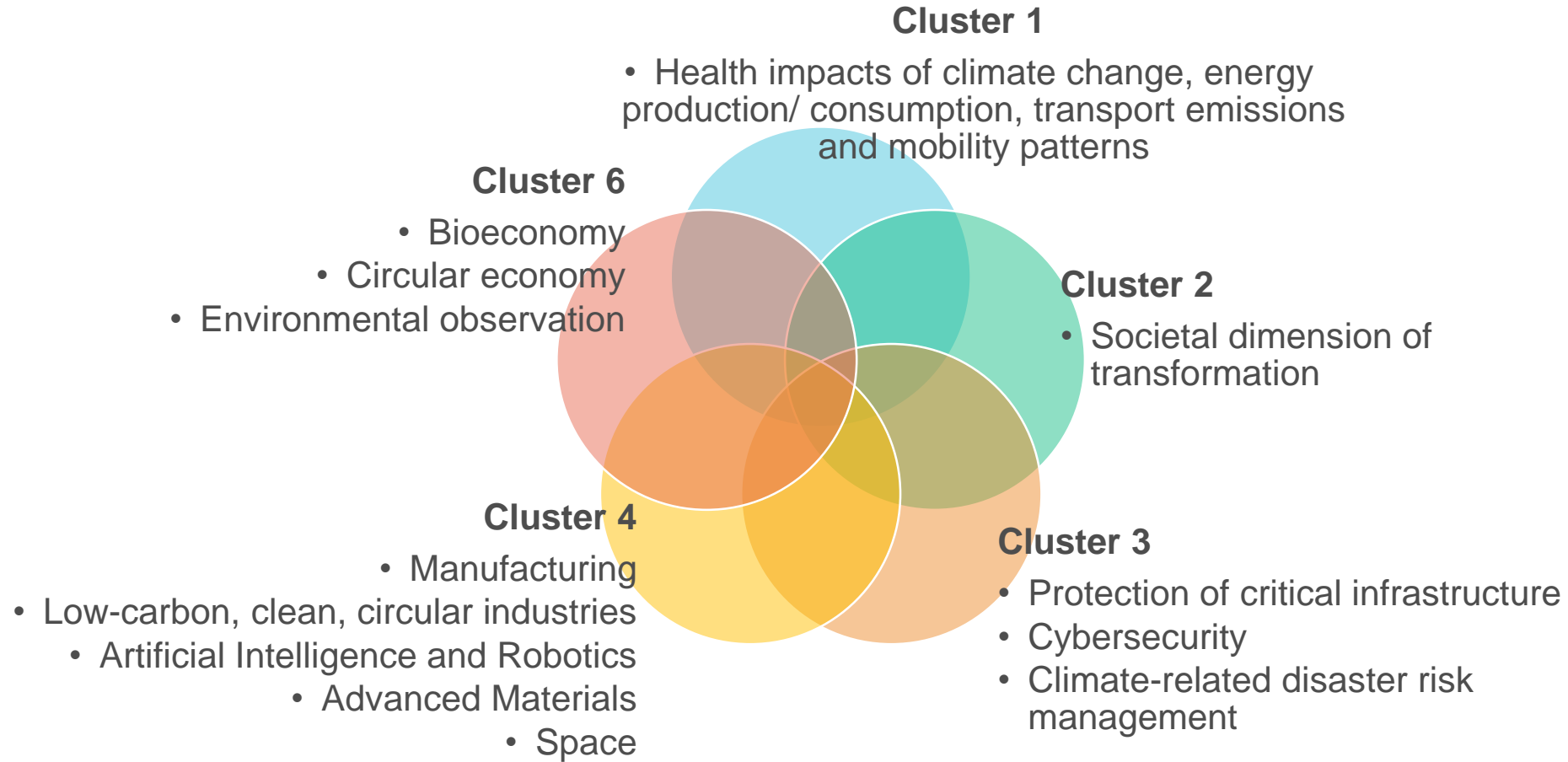
Cluster 5: Climate, Energy and Mobility



Overview



Links to other clusters



European Partnerships

INSTITUTIONAL

Transforming Europe's rail system

(0.6 bn€ EU contribution;
0.6 bn€ private contributions)

Integrated Air Traffic Management

(0.6 bn€ EU contribution; 0.5 bn€ private contributions;
0.5 bn€ from Eurocontrol)

Clean Aviation

(1.7 bn€ EU contribution;
2.4 bn€ private contributions)

Clean Hydrogen

(1.0 bn€ EU contribution;
1.0 bn€ private contributions)

Total: 3.9 bn€ EU contribution

CO-FUNDED

CET | Clean Energy Transition

(210 M€ EU contribution)

DUT | Driving urban transitions to a sustainable future

(140 M€ EU contribution)

Total: 0.35 bn€ EU contribution

CO-PROGRAMMED

Built4People | People-centric sustainable built environment

(380 M€ EU contribution; 400 M€ private contributions)

ZEWT | Zero-emission waterborne transport

(530M€ EU contribution; 3300 M€ private contributions)

CCAM | Connected, Cooperative and Automated Mobility

(500 M€ EU contribution; 500 M€ private contributions)

2ZERO | Towards zero-emission road transport

(615 M€ EU contribution; 615 M€ private contributions)

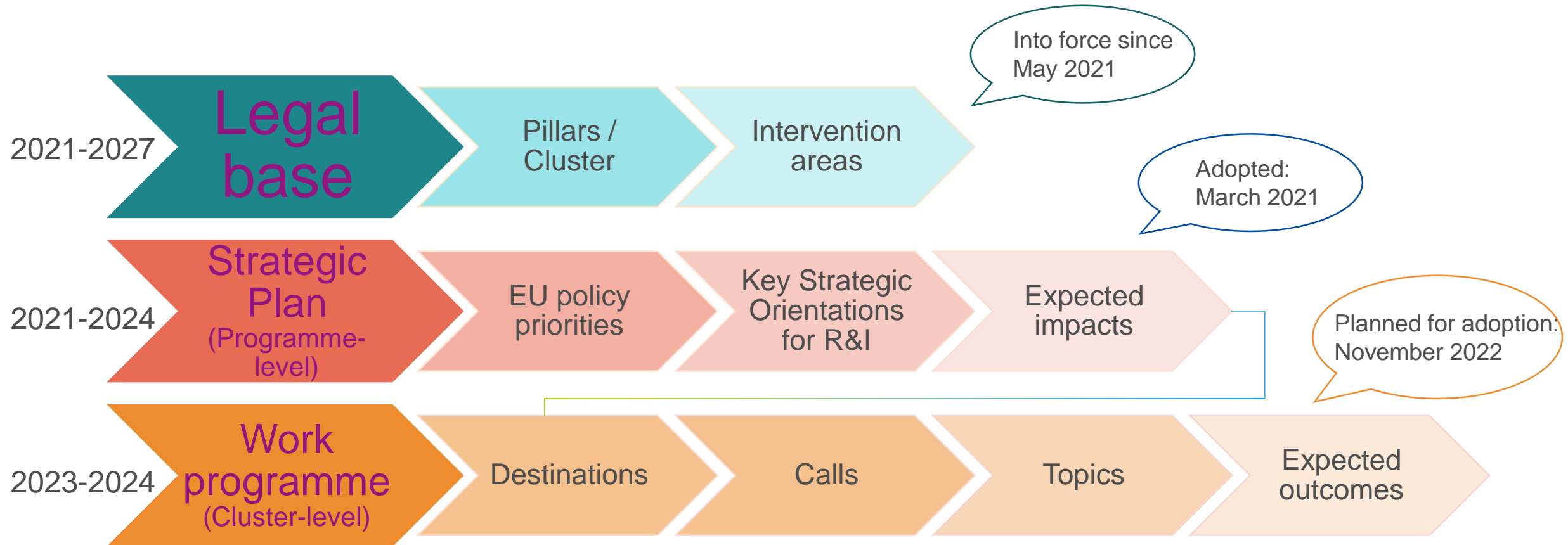
Batt4EU | Towards a competitive European industrial battery value chain

(925 M€ EU contribution; 925 M€ private contributions)

Total: 2.95 bn€ EU contribution

Total: 7.2 bn€

Programme intervention logic



CLUSTER 5 - CLIMATE, ENERGY AND MOBILITY

Work Programme 2023-2024

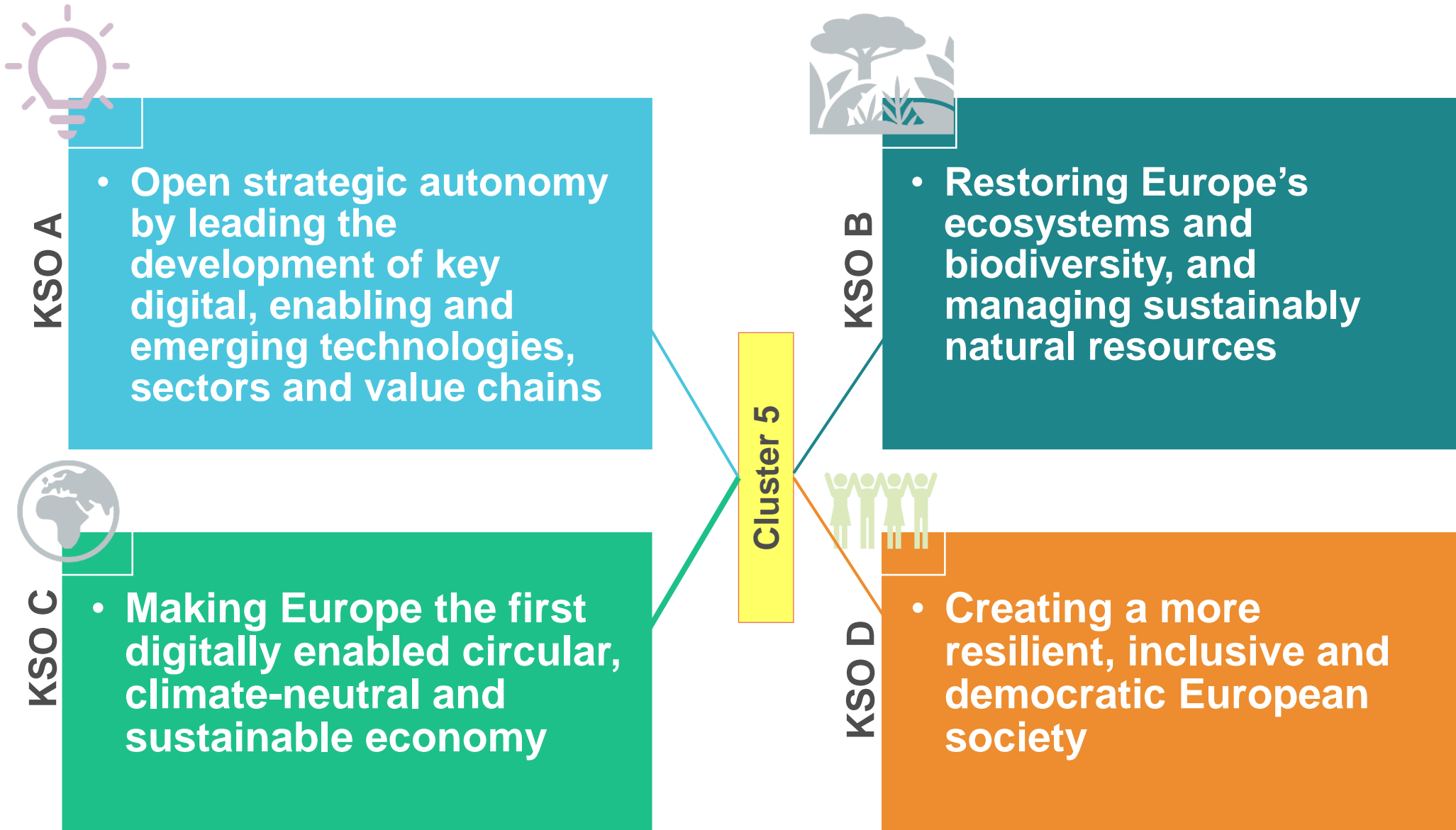


CLUSTER 5 WORK PROGRAMME 2023-2024

Strategic priorities



Key Strategic Orientations (KSO)



Overarching expected impacts for cluster 5

Destination 1

Transition to a climate-neutral and resilient society and economy enabled through **advanced climate science**, pathways and responses to climate change (mitigation and adaptation)

Destination 2

Clean and sustainable transition of the energy and transport sectors towards climate neutrality facilitated by innovative **cross-cutting solutions**

Destination 3

More efficient, clean, sustainable, secure and competitive **energy supply** through new solutions for smart grids and energy systems based on more performant renewable energy solutions

Destination 4

Efficient and sustainable **use of energy**, accessible for all is ensured through a clean energy system and a just transition

Destination 5

Towards **climate-neutral and environmental friendly mobility** through clean solutions across all transport modes while increasing global **competitiveness** of the EU transport sector

Destination 6

Safe, seamless, smart, inclusive, resilient, climate neutral and sustainable **mobility systems** for people and goods

WP 2023-2024: policy priorities

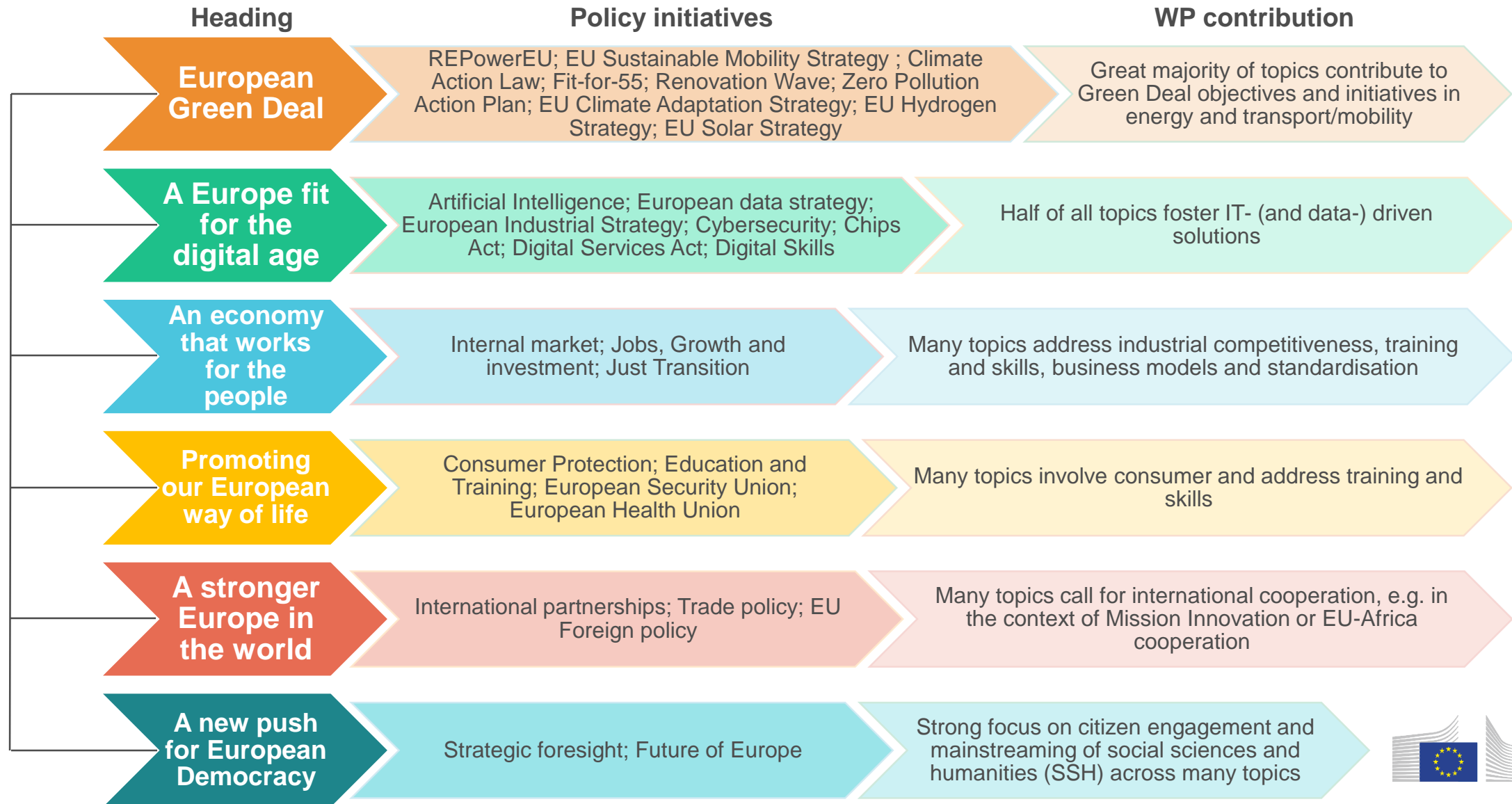


Contribute to **EU policy objectives**

Maximise the **impact and uptake** of activities

Foster **synergies**

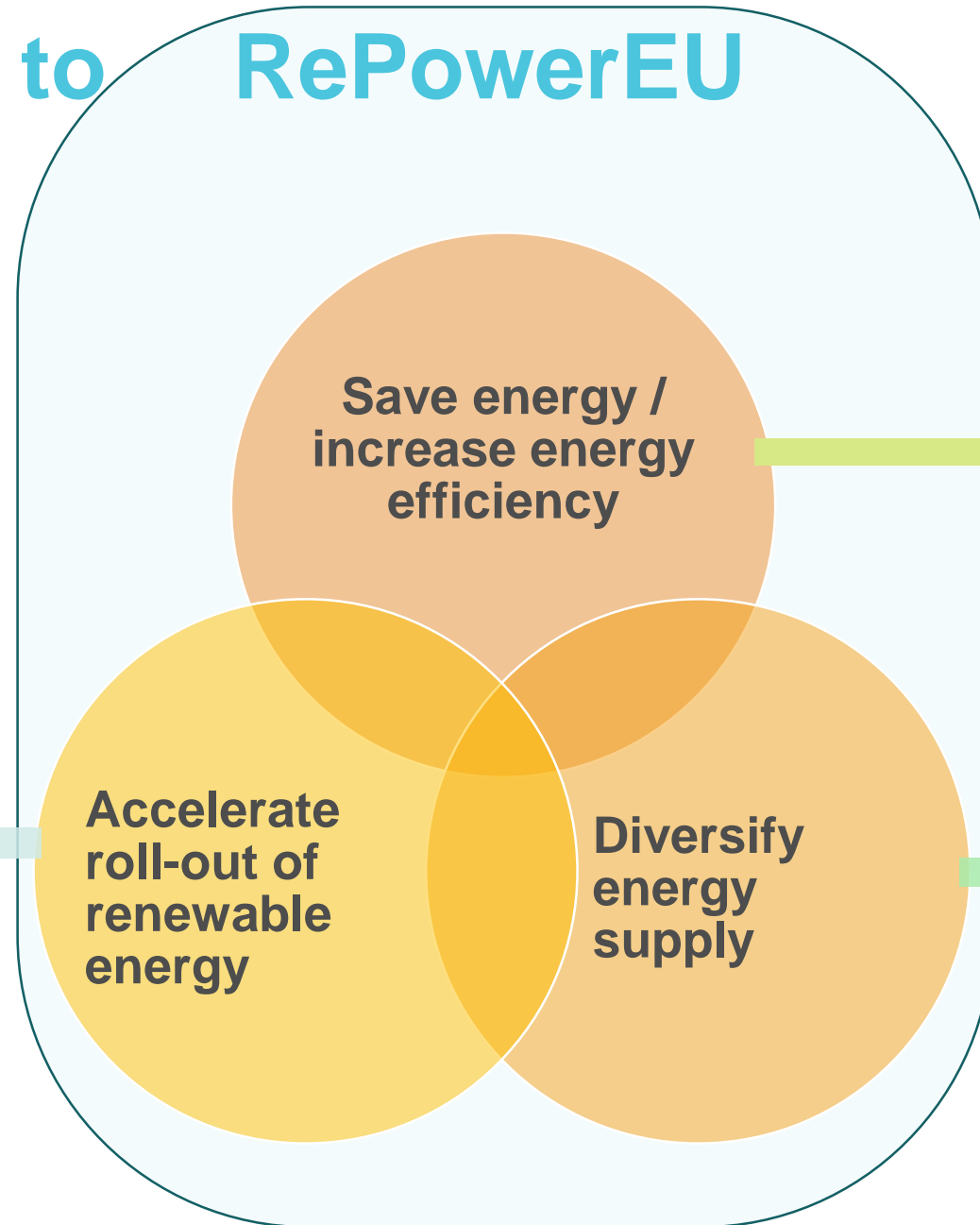
WP 2023-2024: EU policy objectives



Contribution to RePowerEU

Destination 2, 3, 4

- Cheaper and more performant renewable energy technologies (solar energy, wind energy, ocean energy, geothermal energy, hydro power, renewable fuels, heat pumps, solar heating)
- More flexible and resilient energy grids
- Better and smarter energy storage solutions



- More energy-efficient building stock
- Increased energy efficiency in industry
- More efficient mobility solutions
- Cleaner and more efficient transport modes

Destination 2, 4, 5, 6

- Broad portfolio of renewable energy technologies
- Maturing hydrogen-based solutions

Destination 3, 5

Maximise impact of R&I activities

European Partnerships

Around 30% of topics and budget support industry priorities in industry-led Partnerships

Innovation Actions

Almost 45% of topics are Innovation Actions targeting TRL 6 or higher

Large-scale demonstration

100 M€ of support together with the Breakthrough Energy Catalyst Fund (in 2023-2024)

Standardisation

37 topics contribute to standardisation

Societal dimension

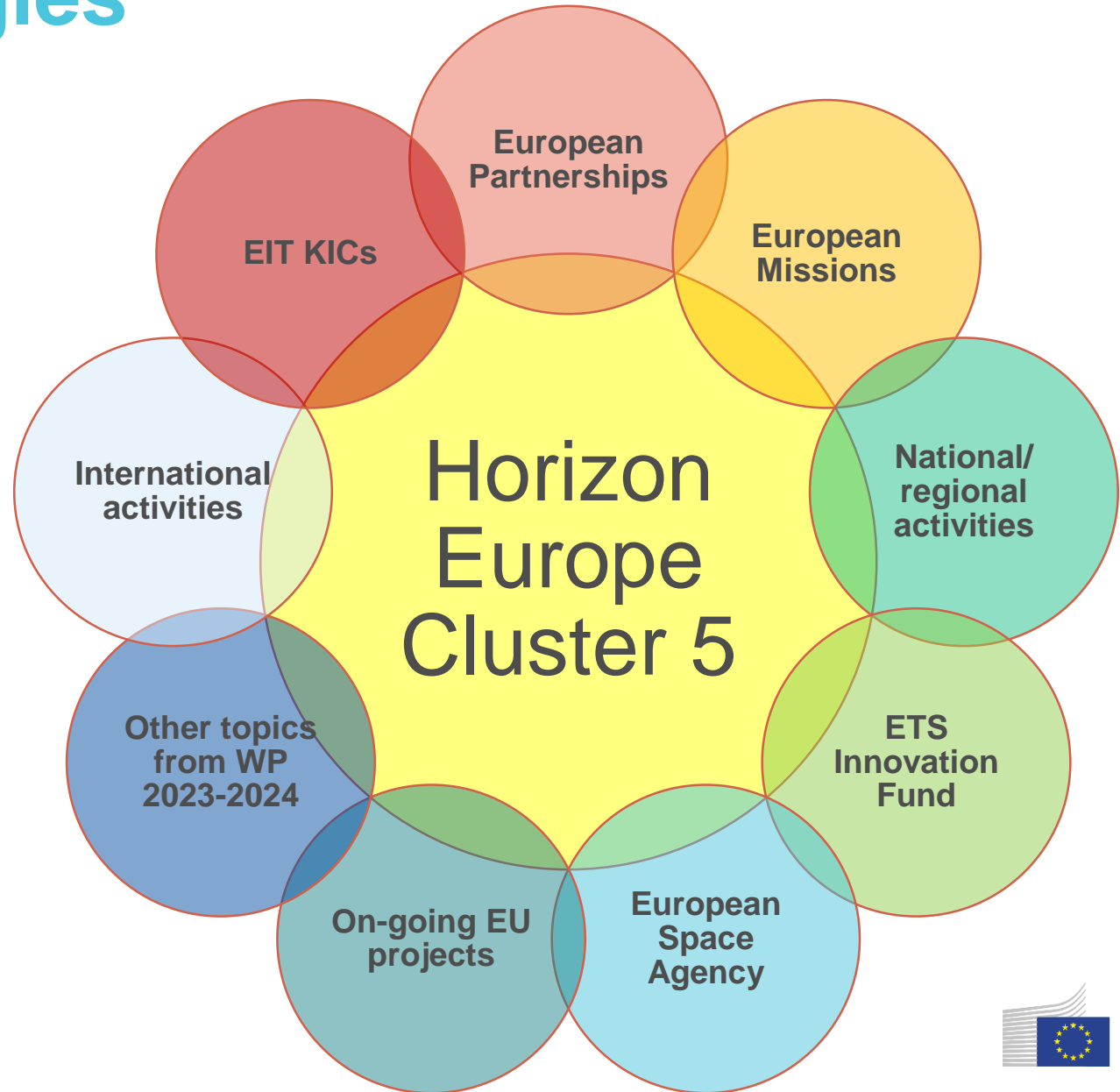
52 topics (28% of all topics) require active societal engagement and integration of social sciences and humanities in project preparation and implementation (including in 'technical' topics)

International cooperation

44 topics (23% of all) foster international cooperation in multilateral initiatives (e.g. Mission Innovation, IPCC) or target specific regions (e.g. Africa) or countries

Fostering synergies

Around $\frac{1}{4}$ of all topics with a total budget of some **730 M€** (~30% of the total budget) refer explicitly to “synergies”



Concrete examples of synergies

With Missions

- **Adaptation to Climate Change**
 - Topic on Modelling for local resilience in support of local adaptation assessments and plans
 - Topic on Behavioural change and governance for systemic transformations towards climate resilience
- **Climate-neutral and Smart Cities**
 - Topic on PV integration in buildings and infrastructure
 - Topic on user-centred and co-designed shared, automated and zero-emission mobility systems and services for people and goods
 - Topic on shaping the future transport and mobility systems
- **Oceans**
 - Topic on Demonstrations to accelerate the switch to safe use of new sustainable climate neutral fuels in waterborne transport

Between and with Partnerships

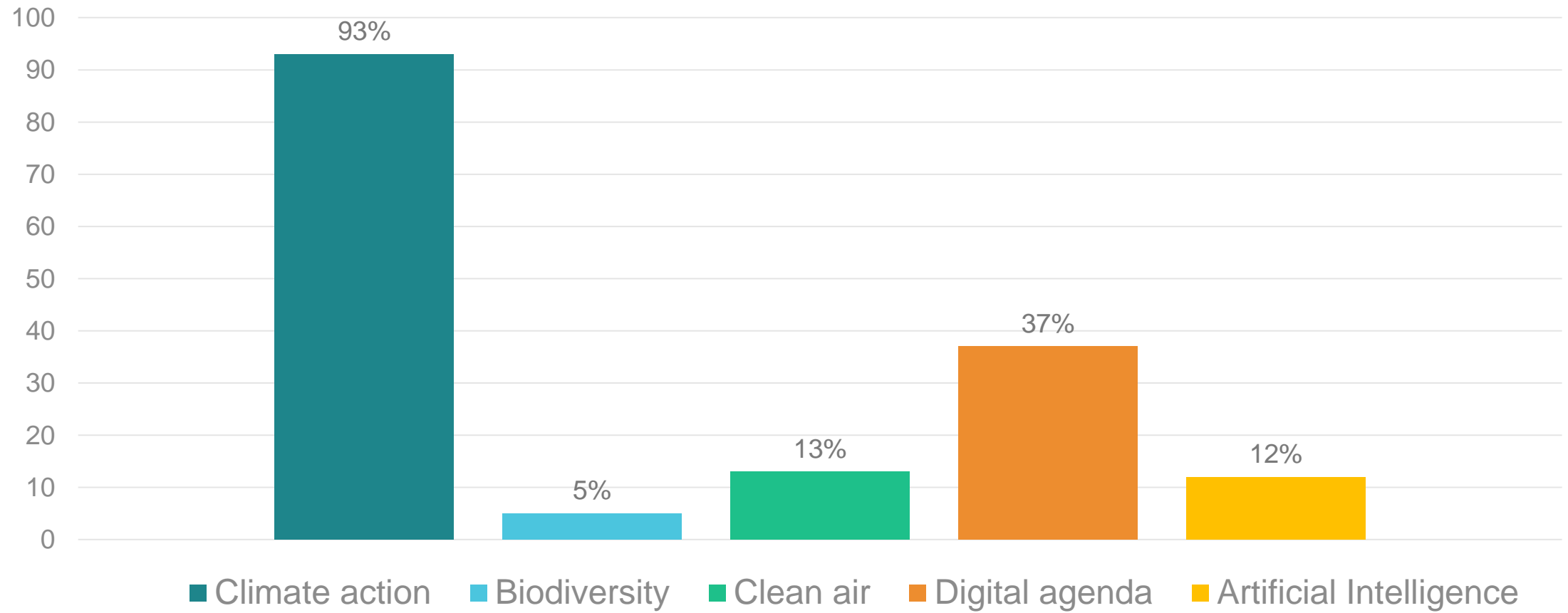
- Collaboration *between* European Partnerships (e.g. Batteries and 2ZERO; CCAM and 2ZERO)
- Collaboration *with* Partnerships (e.g. ZEWT and Batteries/Hydrogen; Multimodal freight transport and CCAM, ZEWT, EU Rail JU)

With Innovation Fund

- 15 topics (in Renewable Energy and Batteries) require exploitation plans that may facilitate further funding through the Innovation Fund

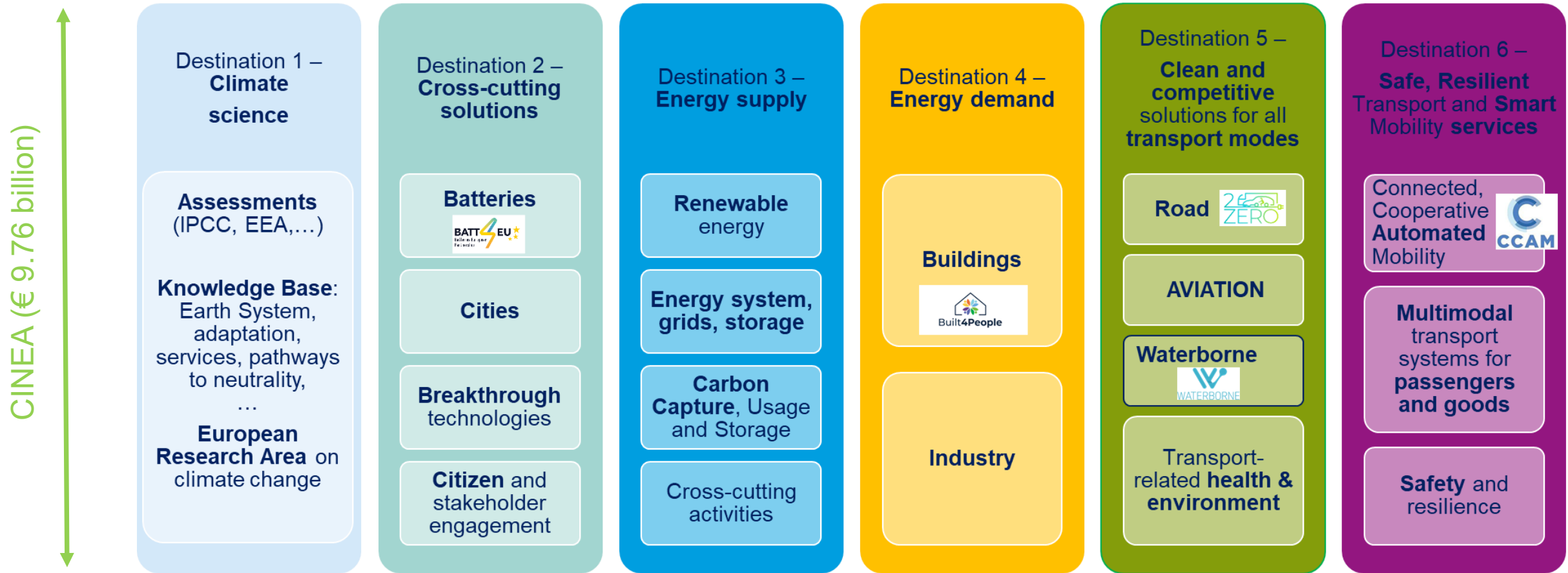
Cross-cutting priorities

Budget for cross-cutting policy priorities (share of total call budget)



Horizon Europe – Climate + Energy + Mobility R&I

2021- 2027 total indicative: **15.1 billion EUR**



Destination 1 – Earth system science

Objectives

- **Advancing knowledge about the Earth system**
- **Contributing to key international assessments**, e.g. Intergovernmental Panel on Climate Change (IPCC)
- Increasing the **transparency, robustness, trustworthiness and practical usability** of the knowledge base on climate change



Issues covered in topics 2023-2024

- advanced science and technologies for analysing Earth system data, tipping points, cloud-aerosol interactions, role of hydrogen in the climate system, methane emissions and sinks, inland ice (cryosphere), paleoclimate, ecosystem-climate interactions

Implementation

- 1 call in 2023 – 4 topics (total budget: 54 M€)
- 1 call in 2024 – 4 topics (total budget: 72 M€)

Destination 1 – Climate change mitigation, pathways to climate neutrality

Objectives

- **Advancing solutions to reduce human interference with the climate system**
- Contributing substantially to key **international assessments**, e.g. Intergovernmental Panel on Climate Change (IPCC)
- Increasing the **transparency, robustness and relevance** of the knowledge base on emission pathways, including integrated assessment models for use by policy makers, practitioners and citizens



Issues covered in topics 2023-2024

- Transition pathway analysis including NDCs, impacts of trade policies, climate foresight for raw material supply, voluntary climate change initiatives, ‘blue carbon’, including co-operation with China

Implementation

- 2 calls in 2023 – 4 topics (total budget: 25.5 M€)
- 1 call in 2024 – 3 topics (total budget: 31 M€)

Destination 1 – Adaptation to climate change, social and behavioural science

Objectives

- **Advancing knowledge on climate impacts**
- Support **better policy design** and more effective implementation **through behavioural insights**
- Contributing to **international assessments**, e.g. Intergovernmental Panel on Climate Change (IPCC)
- Supporting the **Mission on Adaptation**



Issues covered in topics 2023-2024

- Modelling for local resilience, needs-based adaptation in Africa, behavioural change for systemic transformation, climate change education, governance of research on solar radiation modification

Implementation

- 1 call in 2023 – 5 topics (total budget: 38 M€)

Destination 2 – A competitive and sustainable European battery value chain

Objectives

- Nurture a world-class European research and innovation eco-system on batteries along the **value chain** based on sustainable pathways.
- Support the creation of a **competitive, circular, and sustainable European battery manufacturing value chain**

Issues covered in topics 2023-2024

- Raw material processing, advanced materials, recycling technologies, Li-ion batteries, solid state batteries, new generation technologies, manufacturing technologies, smart functionalities, testing, battery management, coordination activities

Implementation

- 2 calls in 2023 – 8 topics (total budget: 119 M€)
- 2 calls in 2024 – 7 topics (total budget: 101 M€)



All topics contribute
to the co-
programmed
Partnership
BAtt4EU

Destination 2 – Emerging breakthrough technologies and climate solutions

Objectives

- Emergence of **unanticipated technologies** enabling emerging zero-greenhouse gas and negative emissions in energy and transport
- Development of **high-risk/high return** technologies to enable a transition to a net greenhouse gas neutral European economy
- Contribution to establishing a solid **long-term dependable innovation** in Europe.



Issues covered in topics 2023-2024

- Energy distribution and transmission, long-term energy storage, novel energy generation/conversion methods

Implementation

- 1 call in 2024 – 1 topic (total budget: 10 M€)

Destination 2 – Cross-cutting actions

Objectives

- Contribution to the European Hydrogen strategy, development of an innovative **hydrogen production** technology, creation of an **industrial ecosystem of green hydrogen production** technology providers
- Bring demo systems to **deployment stage**, create **synergies** between different EU R&I funding programmes, contribute to the **REPowerEU action plan** and other EU climate targets.



Issues covered in topics 2023-2024

- Open Pilot Line/Test Bed for hydrogen; Support for the deployment of R&I results for climate mitigation (synergies with the ETS Innovation Fund)

Implementation

- 1 call in 2023 – 2 topics (total budget: 14 M€)

Destination 2 – Communities and cities

Objectives

- Enable the EU to achieve targets set out by the European Green Deal and fulfil its commitments related to the **UN Agenda 2030**, the **Urban Agenda for the EU**, the **Habitat III New Urban Agenda** and the **Paris Agreement**.
- European cities need to engage urgently in sustainability and climate-neutrality transitions.

Issues covered in topics 2023-2024

- sustainable urban development (enhanced multi-level R&I cooperation, strengthen Europe as a role model), inclusive urban governance, policy and decision-making, local actors' engagement and empowerment

Implementation

- 1 call in 2023 – 1 topic (total budget: 37 M€)



This area is
dedicated to the co-
funded partnership
**Driving Urban
Transition**

Destination 3 – Global leadership in renewable energy

Objectives

- Foster European **global leadership** in affordable, secure and sustainable renewable energy technologies and services by improving their **competitiveness** in global value chains and their position in growth markets
- **Diversify EU gas supplies** and **reduce the EU's dependence** on fossil fuels following the **RePowerEU** action plan

Issues covered in topics 2023-2024

- Renewable valleys, solar energy, wind energy, ocean energy, hydro energy, biofuels, bioenergy, geothermal energy, CHP, storage
- Disruptive technologies, cost reduction, improved efficiency, de-risking, integration, export potential, market uptake

Implementation

- 2 calls in 2023 – 24 topics (total budget: 339 M€)
- 2 calls in 2024 – 20 topics (total budget: 266 M€)



This area includes the co-funded partnership **Clean Energy Transition**

Destination 3 – Energy systems, grid & storage

Objectives

- Increased **resilience, flexibility** and **stability** of the energy system for high penetration of **variable renewables** and other **new low carbon energy supply**
- Innovative **data-driven services for consumers** that empower them to **engage in the energy transition**
- Development of **cyber-security** and **privacy** tools and technologies tailor-made for the energy system



Issues covered in topics 2023-2024

- Energy sector integration; energy system planning and operation; grid resilience and reliability; power electronics; active consumer; markets and energy communities; digitisation; thermal energy storage

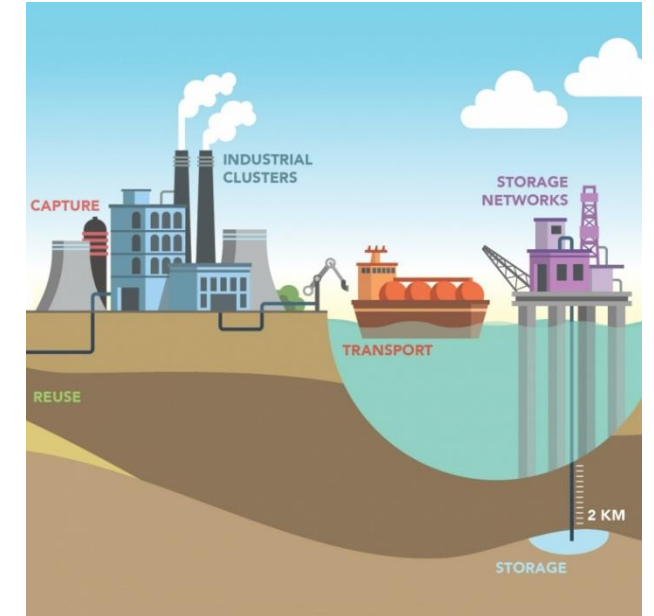
Implementation

- 2 calls in 2023 – 14 topics (total budget: 193 M€)
- 1 call in 2024 – 7 topics (total budget: 88 M€)

Destination 3 – Carbon Capture, Utilisation and Storage (CCUS)

Objectives

- Accelerating the development of Carbon Capture, Use and Storage (CCUS) as a CO₂ emission mitigation option in **electricity generation and industry applications**
- Accelerated rollout of **infrastructure** for CCUS hubs and clusters
- **Reduced cost** of the CCUS value chain



Issues covered in topics 2023-2024

- CCU for the production of fuels, CO₂ removal/negative emissions, CO₂ transport and storage

Implementation

- 1 call in 2023 – 1 topic (total budget: 40 M€)
- 1 call in 2024 – 2 topics (total budget: 30 M€)

Destination 4 – Highly energy-efficient and climate neutral EU building stock

Objectives

- Support **EU ambition** on energy **efficiency** and **independence**, with a stronger link between **innovation in technology** and **practices, policy drivers and instruments**
- Technological and socio-economic breakthroughs for achieving **climate neutrality** and the transition to **zero pollution** of the **building stock by 2050**, based on **inclusive and people-centric R&I**

Issues covered in topics 2023-2024

- Energy performance assessment and monitoring, industrialisation of deep renovation, integrated technology solutions, prefabricated renovation packages, demand response, renewable intensive homes, smart buildings, design, materials, sustainability of life-cycle

Implementation

- 2 calls in 2023 – 10 topics (total budget: 102 M€)
- 2 calls in 2024 – 7 topics (total budget: 70 M€)



Many topics contribute to the co-programmed partnership **Built4People**

Destination 4 – Industry

Objectives

- Increased energy efficiency in industry and reducing industry's Greenhouse Gas (GHG) and air pollutant emissions through **recovery, upgrade and/or conversion of industrial excess (waste) heat** and through **electrification of heat generation**.



Issues covered in topics 2023-2024

- Integration of renewable heat or industrial waste heat in heat-to-cold conversion systems to generate cold for industrial processes; Alternative heating systems for efficient, flexible and electrified heat generation in industry

Implementation

- 1 call in 2023 – 1 topic (total budget: 20 M€)
- 1 call in 2024 – 1 topic (total budget: 16 M€)

Destination 5 – Zero-emission road transport

Objectives

- Transforming **road transport to zero-emission mobility** through a world-class European research and innovation and industrial system, ensuring that Europe remains world leader in innovation, production and services in relation to road transport (more detailed information below).

Issues covered in topics 2023-2024

- User-centric design, battery system management and integration, circular economy approaches, power electronics, optimised smart EV charging, heavy duty/light commercial vehicles, advanced digital tools and softwares

Implementation

- 1 call in 2023 – 6 topics (total budget: 60 M€)
- 1 call in 2024 – 6 topics (total budget: 77 M€)



Topics contribute
to the co-
programmed
partnership
2ZERO

Destination 5 – Aviation

Objectives

- Accelerating the **reduction of all aviation impacts and emissions** (CO₂ and non-CO₂, including manufacturing and end-of-life, noise), developing aircraft technologies for deep reduction of greenhouse gas emissions, and **maintaining European aero-industry's global leadership** position

Issues covered in topics 2023-2024

- Hydrogen-powered aviation, electrified aviation, digital aviation technologies, advanced materials, flying test-bed

Implementation

- 1 call in 2023 – 4 topics (total budget: 54 M€)
- 1 call in 2024 – 4 topics (total budget: 57 M€)



Complementary substantial activities are funded under the Institutional European Partnerships **Clean Aviation and Air Traffic Management**

Destination 5 – Waterborne transport

Objectives

- Accelerate the development and prepare the deployment of **climate neutral and clean solutions** in the shipping sector, **reduce its environmental impact** (on biodiversity, noise, pollution and waste management), improve its **system efficiency**, leverage digital and EU satellite-navigation solutions and contribute to the **competitiveness** of the European waterborne sector



Issues covered in topics 2023-2024

- climate neutral fuels, electrification, integrated digital solutions, reduction of shipping environmental impact, automated shipping, inland waterway vessels, business and industrial models, harmonisation of national policies

Implementation

- 1 call in 2023 – 7 topics (total budget: 93 M€)
- 1 call in 2024 – 7 topics (total budget: 61 M€)

Most topics
contribute to the
co-programmed
partnership **ZEW**T

Destination 5 – Transport-related health and environment

Objectives

- Devising more effective ways for **reducing emissions and their impacts** through improved scientific knowledge



Issues covered in topics 2023-2024

- Advanced transport emissions monitoring networks, assessment of air pollutant emissions from low-carbon fuels in the heavy-duty, aviation, and maritime sectors

Implementation

- 1 call in 2023 – 1 topic (total budget: 10 M€)
- 1 call in 2024 – 1 topic (total budget: 7 M€)

Destination 6 – Connected, cooperative and automated mobility

Objectives

- Accelerating the implementation of innovative **connected, cooperative and automated mobility (CCAM)** technologies and systems for passengers and goods

Issues covered in topics 2023-2024

- On-board perception and decision-making technologies; safety validation; Physical and Digital Infrastructure; cyber-security; socio-economic and environmental impacts; coordination; demonstrators; occupant protection; human behavioural model; fleet and traffic management systems; Artificial Intelligence

Implementation

- 1 call in 2023 – 5 topics (total budget: 50 M€)
- 1 call in 2024 – 5 topics (total budget: 52 M€)



All topics
contribute to the
co-programmed
Partnership **CCAM**

Destination 6 – Multimodal transport, infrastructure & logistics

Objectives

- Further developing a **multimodal transport system** through sustainable and smart long-haul and urban freight transport and **logistics**, upgraded and resilient physical and digital **infrastructures** for smarter vehicles and operations, for optimised system-wide network efficiency



Issues covered in topics 2023-2024

- Zero-emission e-commerce and freight delivery, operational automation to support multimodal freight transport; urban logistics and planning; climate resilient and safe maritime ports, optimisation of multimodal network and traffic management, logistics networks, improved transport infrastructure performance through digital tools, transport and mobility-related governance and policies

Implementation

- 1 call in 2023 – 4 topics (total budget: 31 M€)
- 1 call in 2024 – 4 topics (total budget: 48 M€)

Destination 6 – Safety and resilience

Objectives

- Drastically decreasing the number of **transport accidents, incidents and fatalities** towards the EU's long-term goal of moving close to zero fatalities and serious injuries by 2050 even in road transportation (Vision Zero) and increase the **resilience** of transport systems.



Issues covered in topics 2023-2024

- Infrastructure safety on rural roads, aviation safety, reduction of injuries and long-term consequences in road crashes, safety, resilience and security of waterborne digital systems, societal impacts of disruptive changes in transport, traffic safety improvement in the EU, reduced energy dependency of transport

Implementation

- 1 call in 2023 – 3 topics (total budget: 26 M€)
- 1 call in 2024 – 3 topics (total budget: 22 M€)

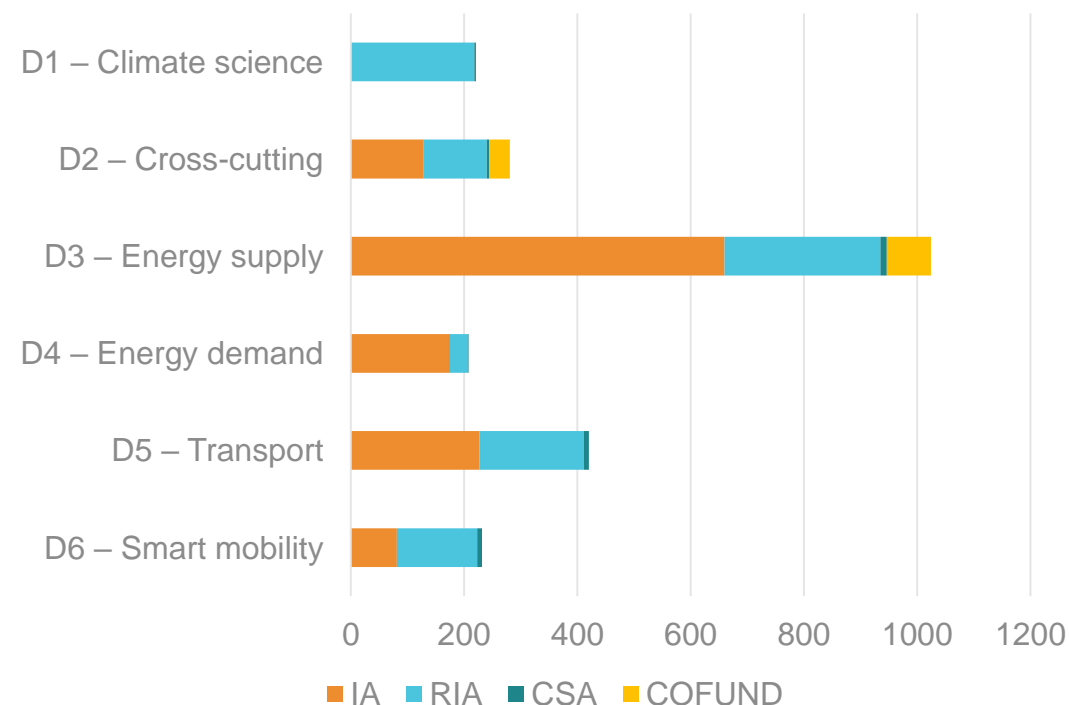
Cluster 5 call structure 2023-2024

		1/12/2022	2/03/2023	1/06/2023	31/08/2023	30/11/2023	29/02/2024	30/05/2024	29/08/2024
Climate sciences	HORIZON-CL5-2023-D1-01	13/12/2022 – 18/04/2023							
	HORIZON-CL5-2023-D1-01	13/12/2022 – 18/04/2023							
	HORIZON-CL5-2024-D1-01				12/09/2023 – 05/03/2024				
Cross-cutting actions	HORIZON-CL5-2023-D2-01	13/12/2022 – 18/04/2023							
	HORIZON-CL5-2023-D2-02			04/05/2023 – 05/09/2023					
	HORIZON-CL5-2024-D2-01					07/12/2023 – 18/04/2024			
	HORIZON-CL5-2024-D2-02						07/05/2024 – 05/09/2024		
Energy supply	HORIZON-CL5-2023-D3-01	13/12/2022 – 30/3/2023							
	HORIZON-CL5-2023-D3-02			04/05/2023 – 05/09/2023					
	HORIZON-CL5-2023-D3-03			04/05/2023 – 10/10/2023					
	HORIZON-CL5-2024-D3-01				12/09/2023 – 16/01/2024				
	HORIZON-CL5-2024-D3-02						07/05/2024 – 05/09/2024		
Energy use	HORIZON-CL5-2023-D4-01	13/12/2022 – 20/04/2023							
	HORIZON-CL5-2023-D4-02			04/05/2023 – 05/09/2023					
	HORIZON-CL5-2024-D4-01					07/12/2023 – 18/04/2024			
	HORIZON-CL5-2024-D4-02						07/05/2024 – 05/09/2024		
Sustainable/ competitive transport	HORIZON-CL5-2023-D5-01	13/12/2022 – 20/04/2023							
	HORIZON-CL5-2024-D5-01					07/12/2023 – 18/04/2024			
Mobility systems	HORIZON-CL5-2023-D6-01			04/05/2023 – 05/09/2023					
	HORIZON-CL5-2024-D6-01						07/05/2024 – 05/09/2024		

Budget distribution in calls for proposals

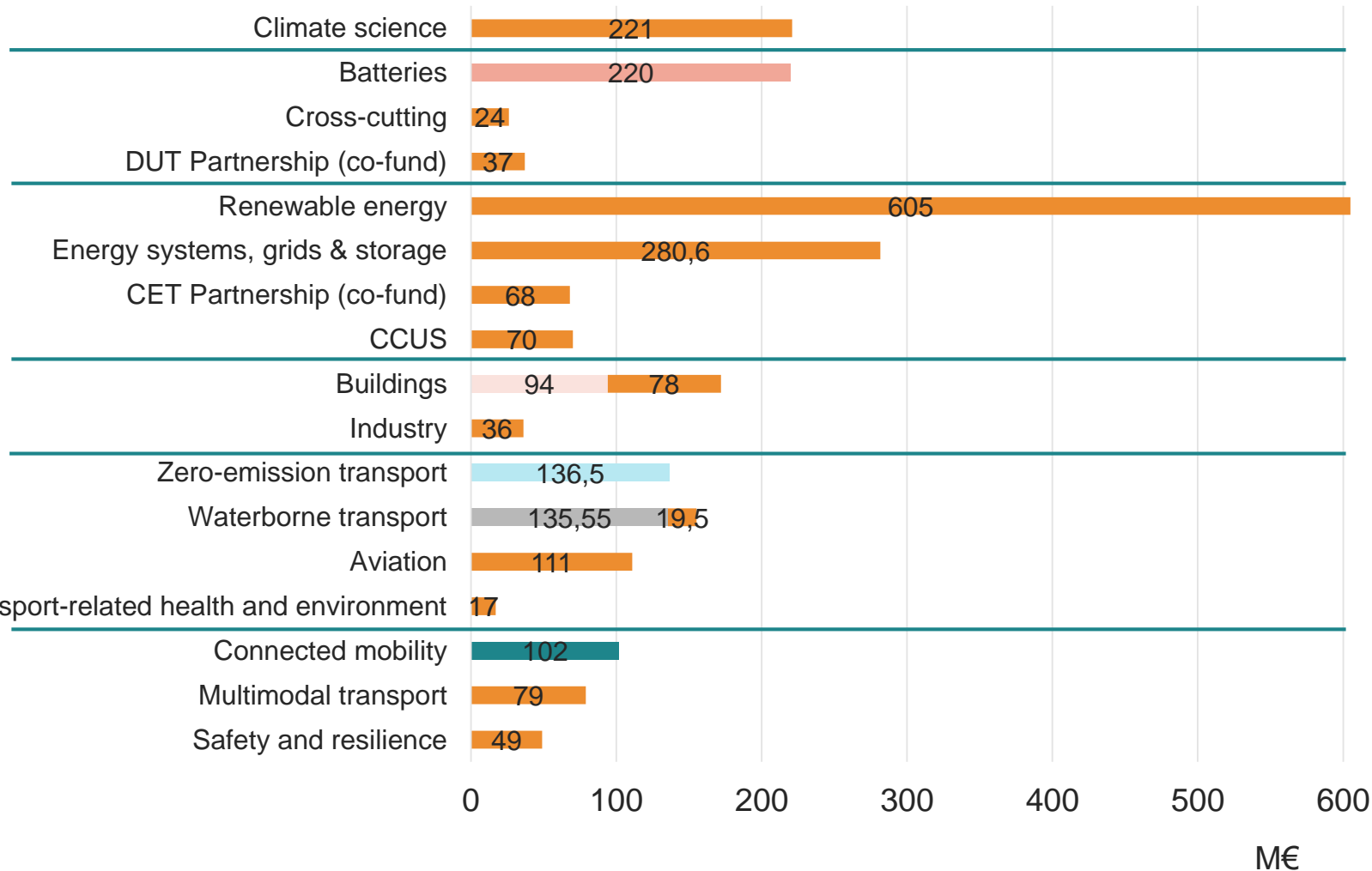
	Budget (M€)	Budget share	Number of topics	Topics share
D1 – Climate science	220,5	9%	20	11%
D2 – Cross-cutting	281,0	12%	19	10%
D3 – Energy supply	1.023,6	43%	69	37%
D4 – Energy demand	208,0	9%	19	10%
D5 – Transport	419,1	18%	37	20%
D6 – Smart mobility	231,0	10%	25	13%
TOTAL	2.383,2	100%	189	100%

EU contribution per Destination and type of action (2023-2024, in M€)



Budget distribution

EU contribution per thematic area (2023-2024, in M€)



European Partnerships:

- 60 out of 189 topics (32% of all cluster 5 topics)
- 688 M€ out of 2 383 M€ (29% of cluster 5 budget)

■ standard topics

Co-programmed Partnerships:

■ CCAM

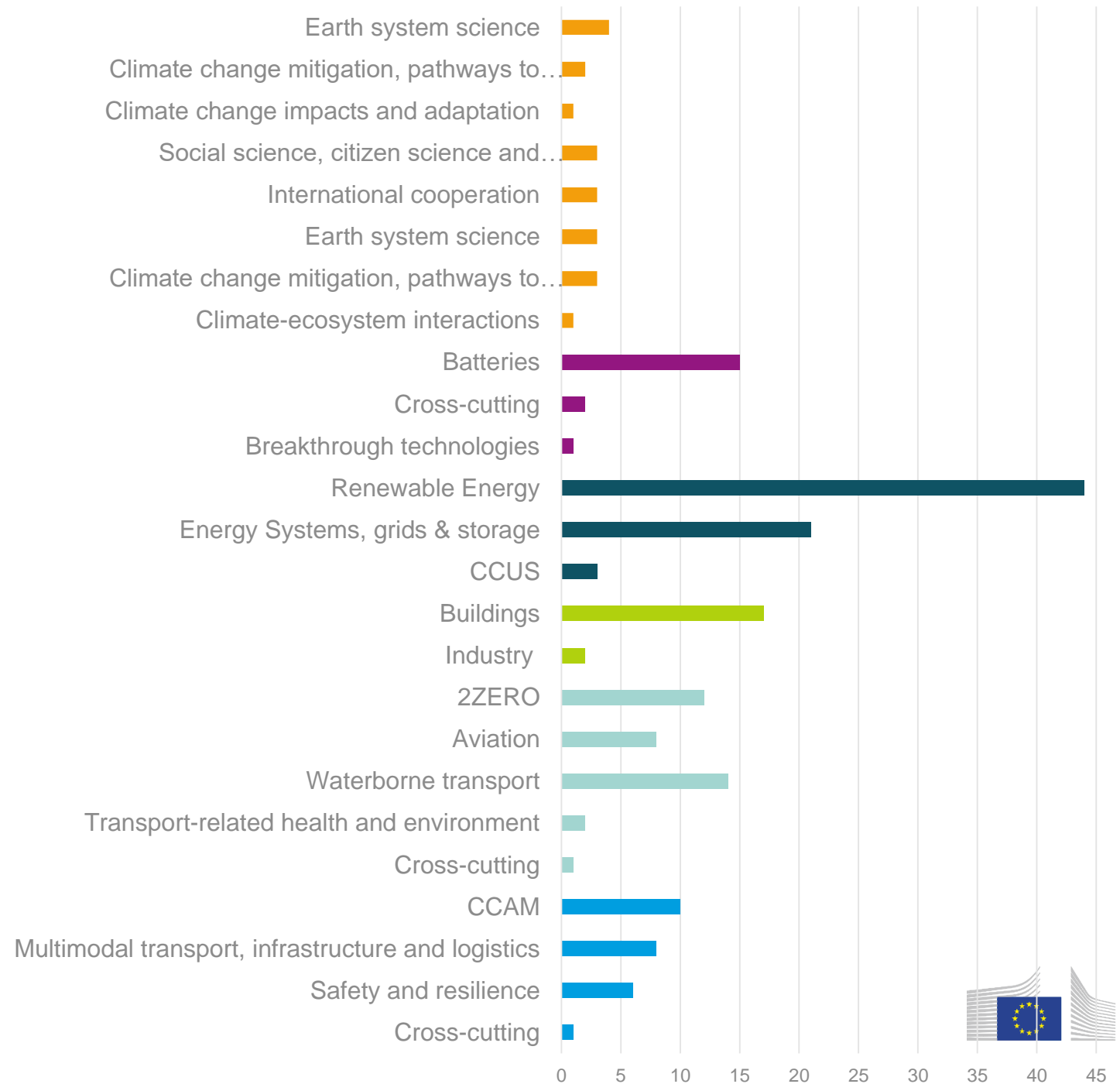
■ 2ZERO

■ Batt4EU

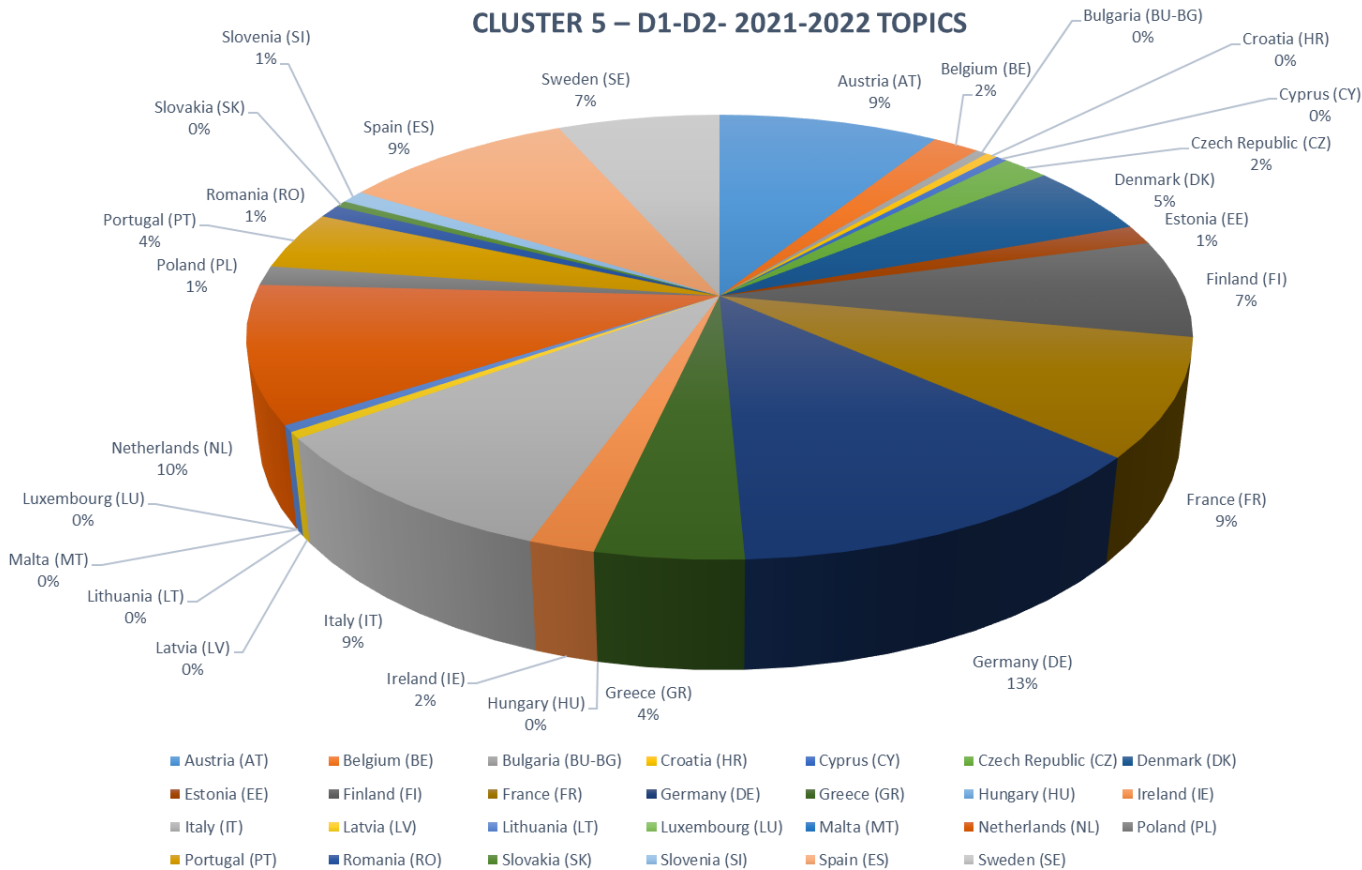
■ Built4People

■ ZEWT

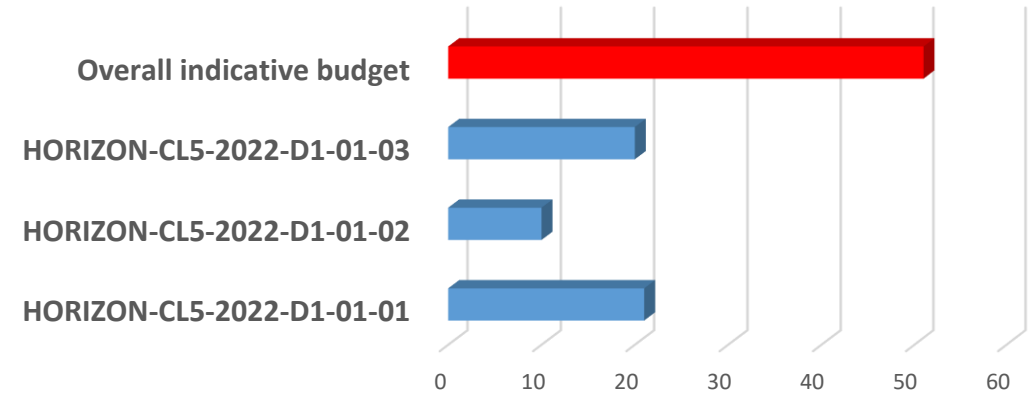
Number of topics per area



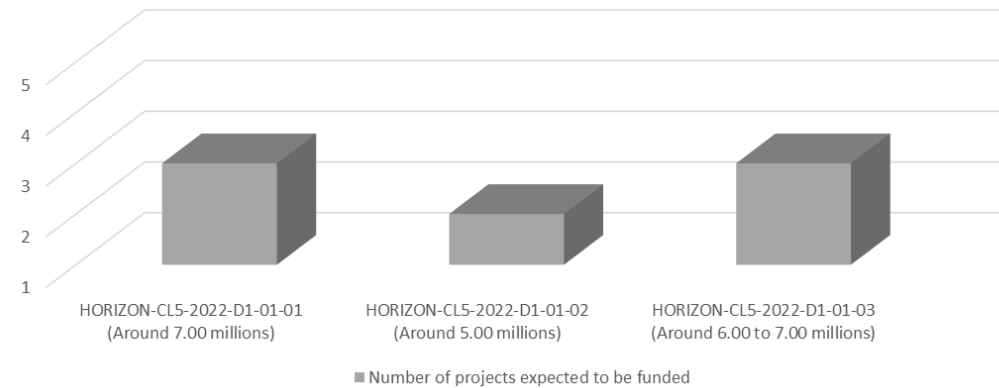
Statistics



HORIZON-CL5-2022-D1-01 (stage 2) (in millions) (on-going evaluations)



Number of projects expected to be funded HORIZON-CL5-2022-D1-01 (stage2)



Horizon Europe Missions

Five Missions Areas



Adaptation to
climate change,
including societal
transformation



Cancer



Healthy oceans,
seas, coastal &
inland waters



Climate-neutral
& smart cities



Soil health &
food



EUROPEAN UNION



EU MISSIONS

ADAPTATION TO CLIMATE CHANGE

Support at least 150 European regions and communities to become climate resilient by 2030



#EUmissions #HorizonEU #MissionClimate

Mission "Adaptation to Climate Change"

Objectives

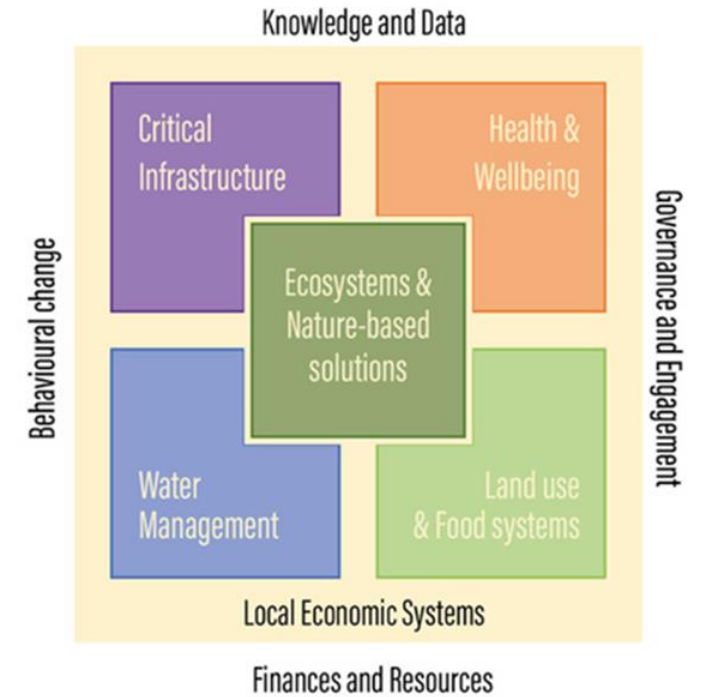
- Accompany by 2030 at least 150 European regions and communities towards climate resilience.
- Put the EU's adaptation strategy in practice by helping the regions to
 - better understand the climate risks they are and will be confronted with in the future
 - develop their pathways to be better prepared and cope with the changing climate
 - test and deploy on the ground innovative solutions needed to build resilience.

Issues covered in 2023

- Increasing climate resilience of the agriculture and/or forestry sector
- Protecting critical infrastructure from climate change, mainstreaming nature-based solutions
- Building resilience towards health risks caused by the effects of climate change
- Urban greening and re-naturing for urban regeneration, resilience and climate neutrality (*joint action with Cities Mission*)
- Integrated approach to increasing landscape water retention capacity at regional scale

Implementation

- Total budget: 138 M€



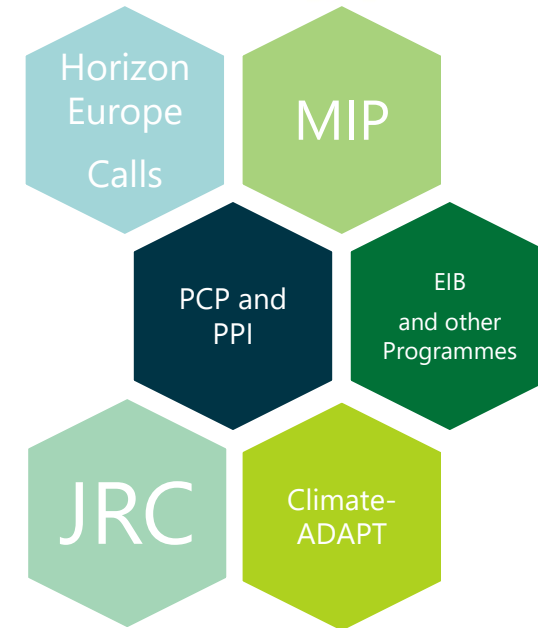
More info here:

https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/adaptation-climate-change_en



How does the Mission support the Regions?

1. Horizon Europe **project grants**: calls currently opened and future yearly calls (e.g. possible support to **public procurers to buy innovative/pre-commercial solutions for climate resilience**)
2. Services by **Mission Implementation Platform (MIP)**
3. Scientific **guidance and support** by JRC
4. Access to **climate adaptation knowledge** from **Climate-ADAPT** by EEA
5. Facilitate access to **EIB Climate Adaptation Investment Advisory Platform (ADAPT)**





Mission Charter

Why the Mission Charter?

- be part of a **community of practice** on adaptation to climate change
- **network and share** with other regions and local authorities
- **join the annual Mission Forum** to share experience, take stock of the collective progress and contribute to steer the Mission actions



215
CHARTER
SIGNATORIES

- 202 EU regions and local authorities, from 24 EU Member States
- 13 regions and local authorities from countries associated to Horizon Europe, the EU's research and innovation programme (2021-2027)



Large regions



Cities



Provinces



Municipalities



Capitals

FRIENDS OF
THE MISSION

- 40 private companies, service centres, research networks, and local action groups to endorse the Charter and become friends of the Mission

Mission Adaptation to climate change

Objectives

- Testing and demonstrating transformative solutions



Issues covered in topics 2023

- Agriculture and/or forestry sector, critical infrastructure and NBS, health risks

Implementation

- 1 call in 2023 – 3 topics (total budget: 83 M€), call ddl September 2023

Mission Adaptation to climate change

Objectives

- Joint call with Mission 100 Climate Neutral and Smart Cities by 2030



Issues covered in topics 2023

- Urban regeneration, resilience and climate neutrality

Implementation

- 1 call in 2023 – 1 topic (total budget: 40 M€), call ddl April 2023

Mission Adaptation to climate change

Objectives

- Joint call with Mission Restore our Ocean and Waters by 2030 and Mission A Soil Deal for Europe



Issues covered in topics 2023

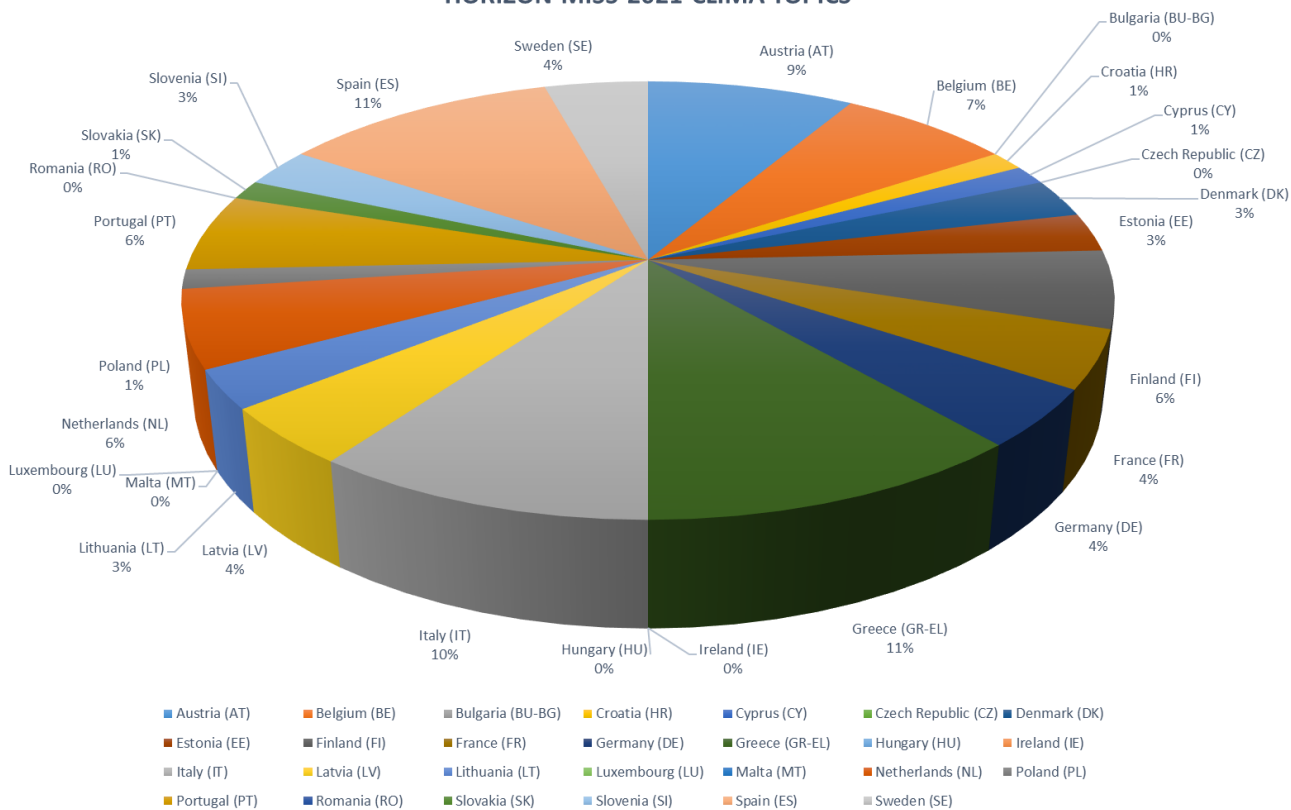
- Demonstration on increasing landscape water retention capacity

Implementation

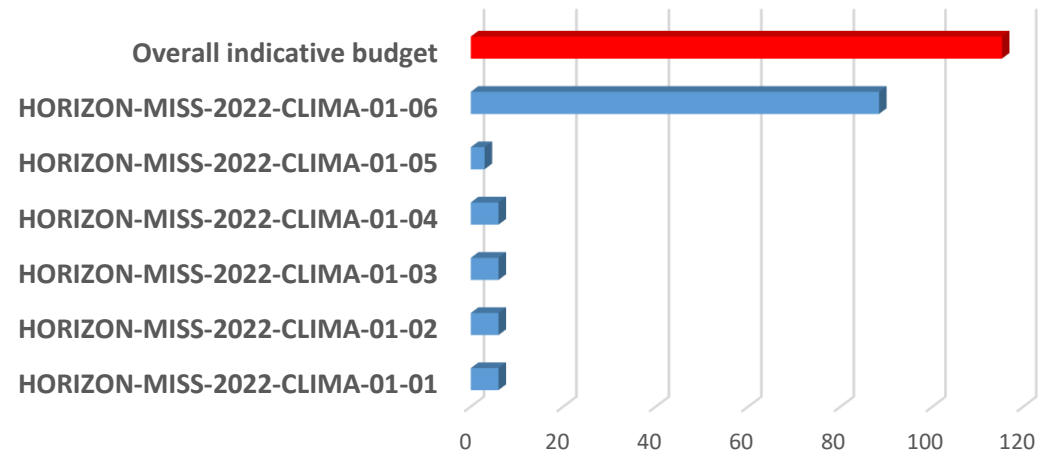
- 1 call in 2023 – 1 topic (total budget: 15 M€), call ddl September 2023

Statistics

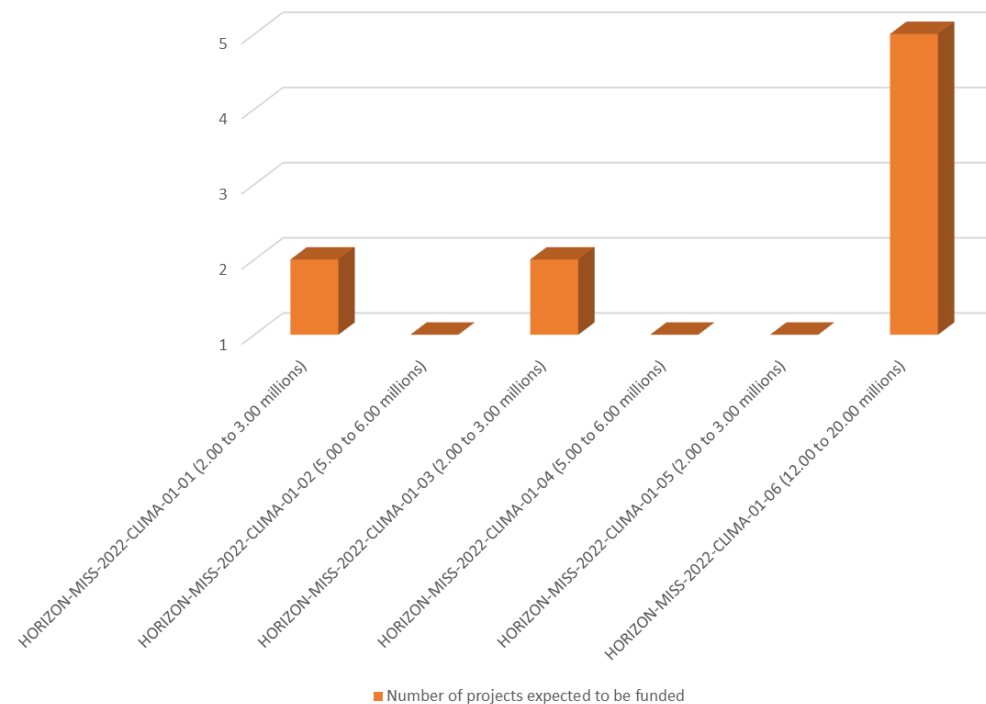
HORIZON-MISS-2021-CLIMA TOPICS



HORIZON-MISS-2022-CLIMA TOPICS (in millions)
(on-going evaluations)



Number of projects expected to be funded
HORIZON-MISS-2022-CLIMA TOPICS





EUROPEAN UNION



EU MISSIONS

CLIMATE-NEUTRAL & SMART CITIES



#EUmissions #HorizonEU #MissionCities



WHY A MISSION ON CLIMATE-NEUTRAL CITIES?

- **75%** of EU citizens live in cities (projected to increase to about 85% in 2050)
- More than **65%** of energy consumption and more than **70%** of CO2 emissions worldwide
- Co-benefits – lower air/noise pollution, congestion and road deaths. Lower energy bills and better energy security. Loveable and liveable cities!
- The **European Green Deal** is set at EU / national level, but will be implemented at local level – particularly in cities and regions: where policy meets people
- Cities have the **ambition** to go further – but few have declared readiness to be fully climate neutral by 2030. We want to help cities address the barriers they face

Mission "100 Climate-Neutral and Smart cities by 2030"

Objectives

- 100 climate-neutral and smart cities by 2030
- Ensure that these cities act as experimentation and innovation hubs to put all European cities in a position to become climate-neutral by 2050

Issues covered in 2023

- Smart systems and services for user-centred shared zero-emission mobility of people and freight in urban areas (*joint action with 2ZERO and CCAM Partnership*)
- Positive clean energy district (PED) digital twins
- Associating Ukrainian cities to the Climate-neutral and smart cities Mission
- Support to the Mission Platform
- Urban greening and re-naturing for urban regeneration, resilience and climate neutrality (*joint action with Climate Adaptation Mission*)

Implementation

- Total budget: 155 M€



More info here:

https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/climate-neutral-and-smart-cities_en



A NEW APPROACH TO URBAN CLIMATE ACTION

- **Demand-driven** and innovative process based on the needs of the cities
- **Systemic** change via research and innovation actions across sectors
- **Multi-level governance** linking local, regional, national and EU levels
- Support for **accessing funding and finance** on a large scale
- **Citizens involved** in the design and implementation of the Mission



MAIN ELEMENTS OF THE MISSION

**Climate City
Contracts**

Mission Platform

Tailor-made help
with funding and
financing

A Mission label to
unlock synergies
with other
programmes

R&I action under
Horizon Europe

Innovative city
governance
models and citizen
engagement

Common
framework for
monitoring,
reporting and
verification



BENEFITS

- Tailor-made advice and assistance from the **Mission Platform**
- Unlocking additional funding and financing opportunities through a **Mission label**
- **Research & innovation**: funding opportunities for cities to be part of large innovation actions, pilot projects and demonstrators
- Support through a **national coordination network**
- **Networking opportunities**, learning and exchange of experiences among cities
- Support with **involving citizens** in decision-making
- **High visibility** – raising political profile and attractiveness for investment and skilled workers

Mission 100 Climate-Neutral and Smart Cities by 2030

Objectives

- Actions to support the implementation



Issues covered in topics 2023

- Zero-emission mobility in urban areas, Positive clean energy districts

Implementation

- 1 call in 2023 – 2 topics (total budget: 70 M€), call ddl April, September 2023

Mission 100 Climate-Neutral and Smart Cities by 2030

Objectives

- Actions to support the implementation



Issues covered in topics 2023

- Association of Ukrainian cities

Implementation

- 1 call in 2023 – 1 topic (total budget: 5 M€), call ddl September 2023

Mission 100 Climate-Neutral and Smart Cities by 2030

Objectives

- Joint call with Mission Adaptation to Climate Change



Issues covered in topics 2023

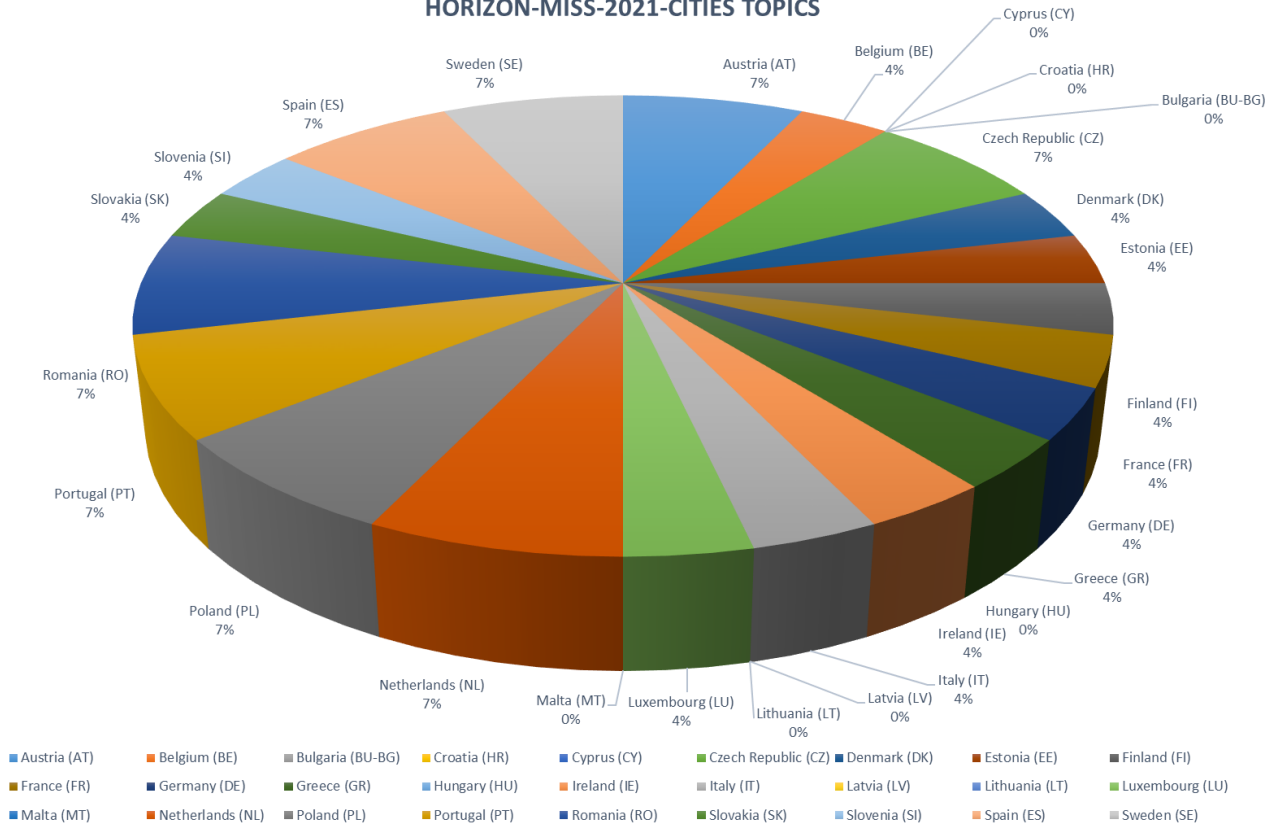
- Urban regeneration, resilience and climate neutrality

Implementation

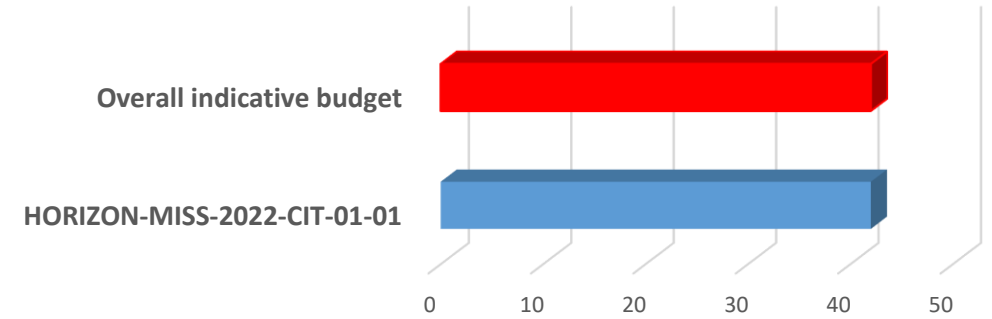
- 1 call in 2023 – 1 topic (total budget: 40 M€), call ddl April 2023

Statistics

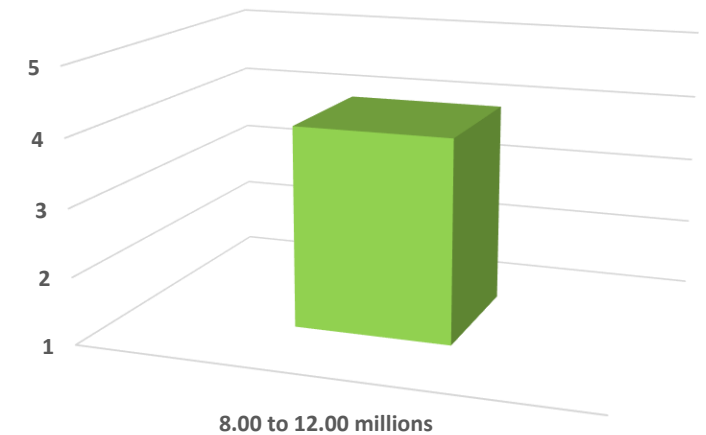
HORIZON-MISS-2021-CITIES TOPICS



HORIZON MISS-2022-CITIES TOPIC (in millions)
(on-going evaluations)



Number of projects expected to be funded
HORIZON-MISS-2022-CITIES TOPIC



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Thank you!

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