



# Energy in Horizon Europe



**Open Event Ulyseus European University**

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CDTI

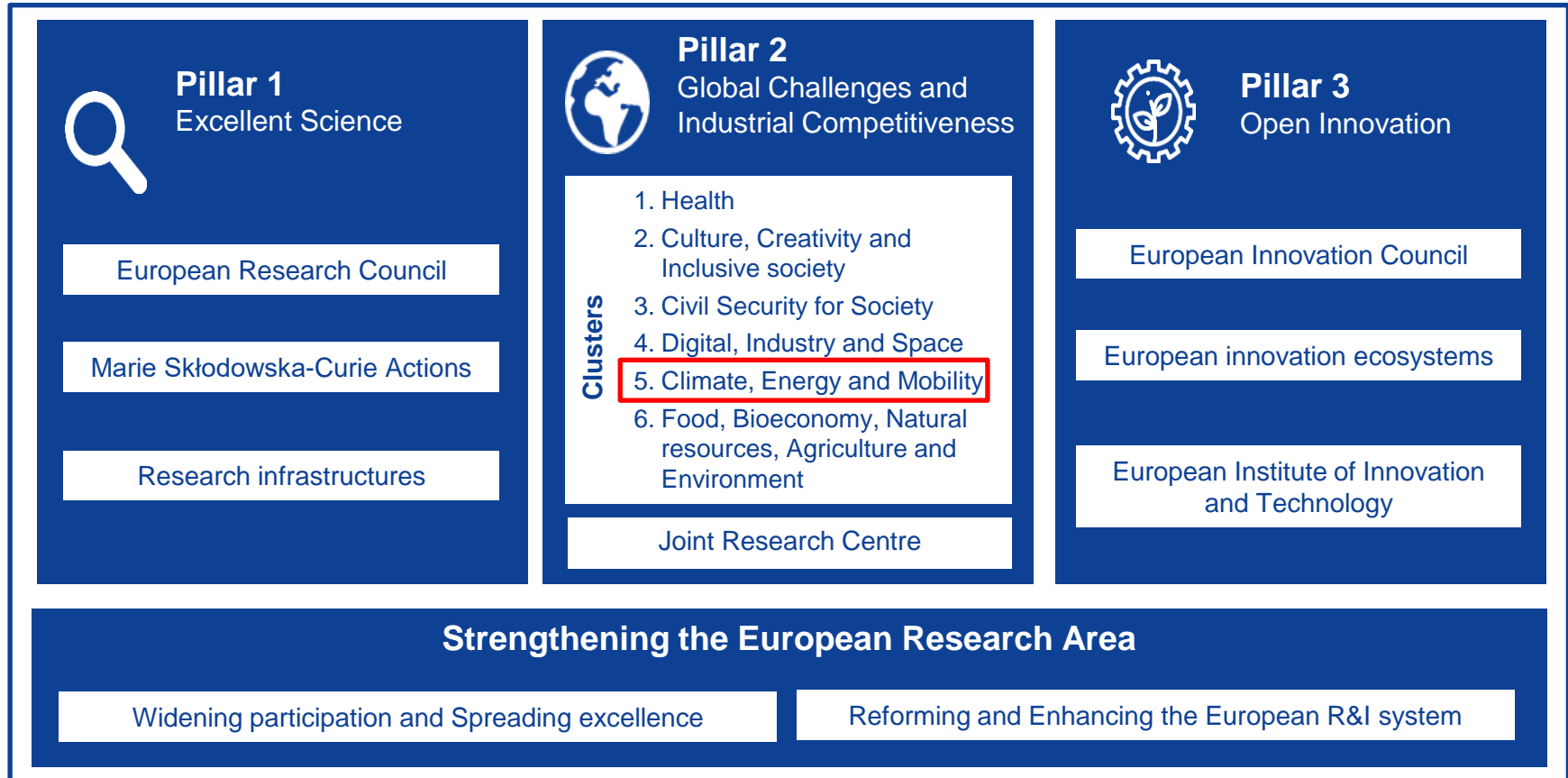
Ministry of Science and Innovation

# Disclaimer

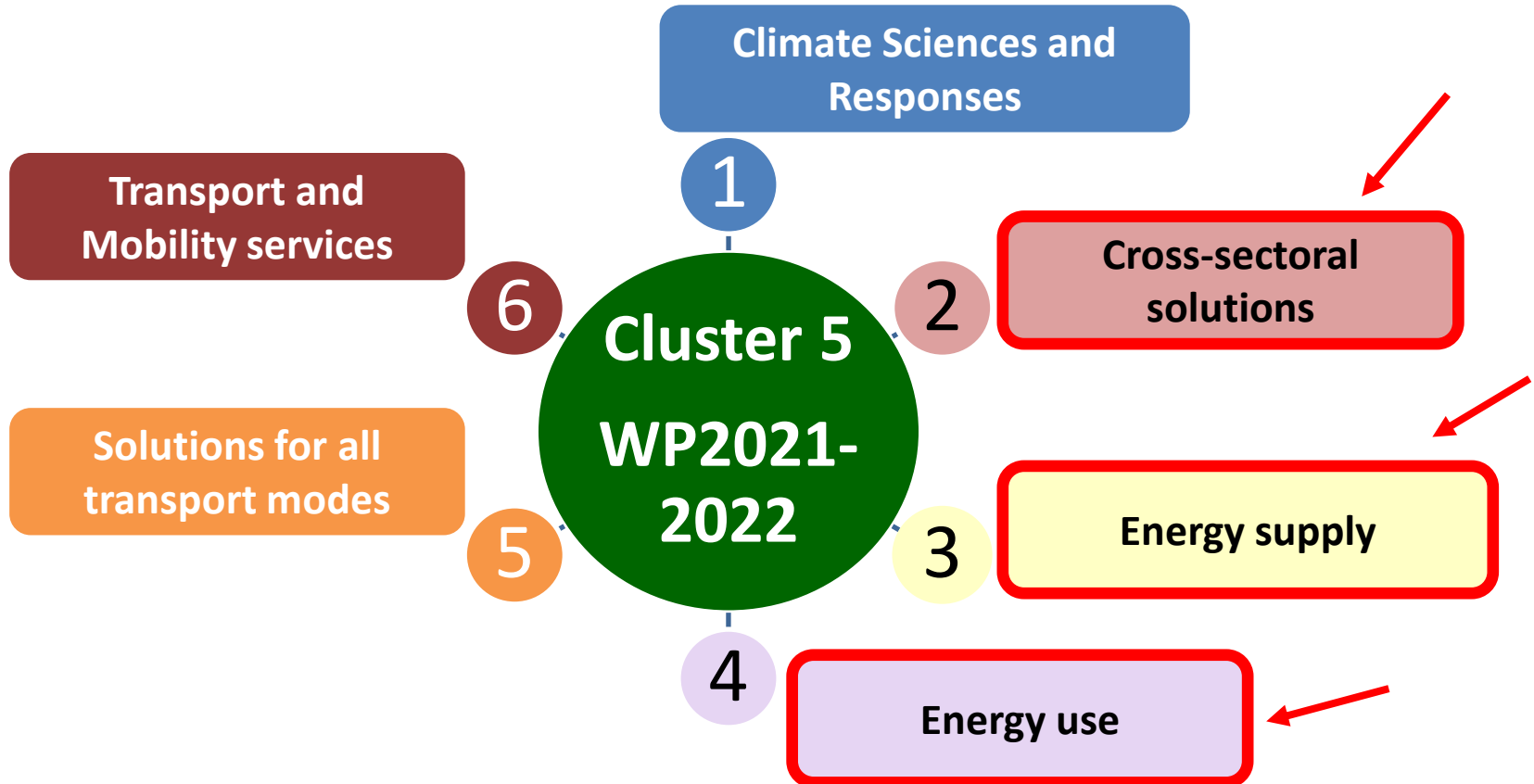
- Provisional information
- For preparing your proposals, please refer to the final version of the WorkProgramme, to be published by the European Commission in the Funding and Tenders Portal (publication expected in June)

# Horizon Europe (2021-2027)

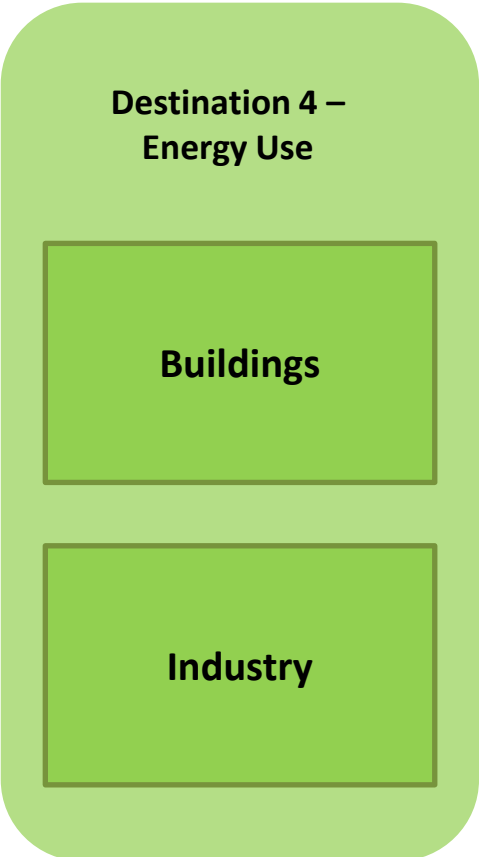
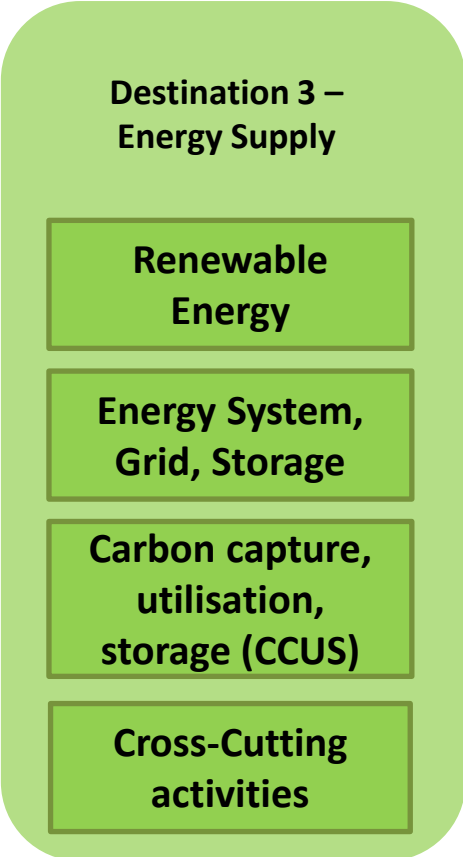
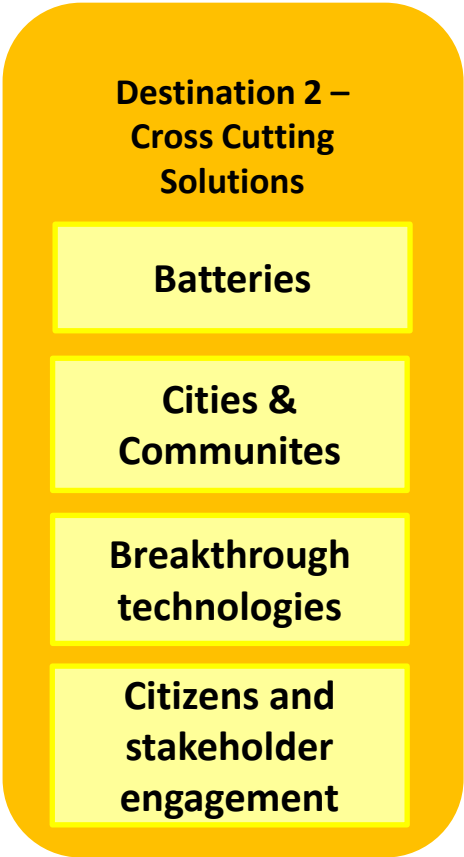
# Structure



# Cluster 5 – Destinations



# Cluster 5: Climate, Energy, Mobility



# Destination 2: Cross-sectoral solutions for the climate transition

## A competitive and sustainable European battery value chain

- Raw materials
- Advanced materials
- Manufacturing processes
- Recycling technologies

## Communities and cities

- Mobility services, urban mobility
- Positive Energy Districts
- Zero-pollution, nature-based solutions
- Digitalisation, urban platforms
- Social innovation, lifestyle changes

# Destination 2: Cross-sectoral solutions for the climate transition

## Emerging breakthrough technologies and climate solutions

- Emerging technologies for a climate neutral Europe
- Methane cracking to usable hydrogen and carbon
- Technologies for non-CO2 greenhouse gases removal
- Direct atmospheric carbon capture and conversion

## Citizens and stakeholder engagement

- Fostering a **just transition** in Europe
- Strengthening **Social Sciences and Humanities** research communities in climate, energy and mobility disciplines
- Accelerating the **climate transition in difficult contexts**: transition super-labs (pilot)

# Destination 3: Sustainable, secure and competitive energy supply

## Global leadership in renewable energy

- Concentrated Solar Power, Photovoltaics
- Wind, Ocean, Hydropower, Geothermal
- Renewable fuels, bioenergy, synthetic fuels, solar fuels
- Combined heat and power, renewable heating and cooling

## Energy systems, grids and storage

- Energy sector integration
- Electricity system reliability and resilience
- Transmission of energy
- Green digitalisation of the energy system – interoperability and data
- Storage development and integration



# Destination 3: Sustainable, secure and competitive energy supply

## Carbon capture, utilization and storage (CCUS)

- Integration of CCUS in hubs and clusters
- Decarbonising industry with CCUS
- Cost reduction of CO2 capture

## Cross-cutting issues

- Support to the activities of the European Geological Services
- Support to the activities of the European Technology Platforms and technology areas of the SET-Plan

# Destination 4: Efficient, sustainable and inclusive energy use

## Highly energy-efficient and climate neutral EU building stock

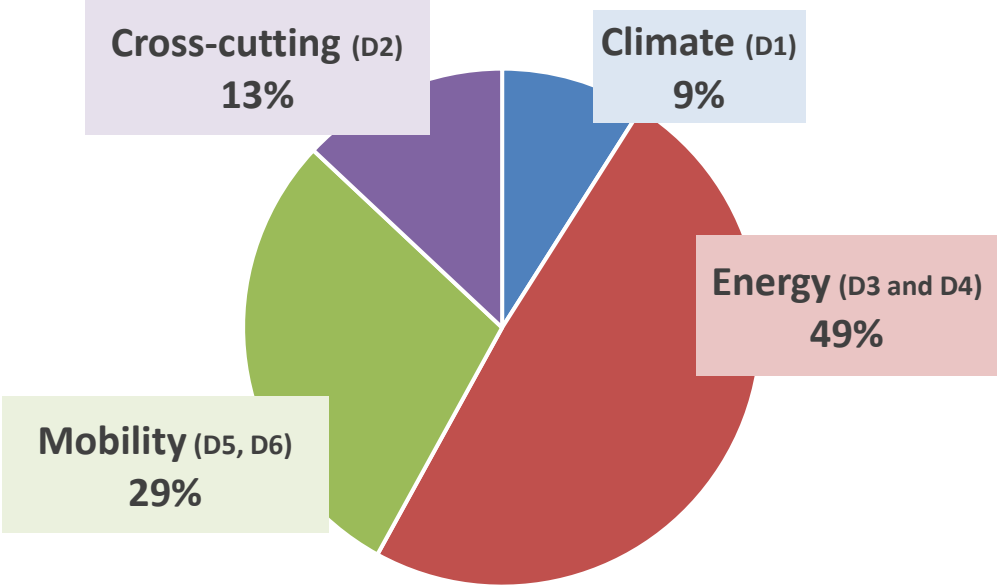
- **Building Energy Efficiency:** energy performance, smartness
- People-centric, cost-effective and sustainable **renovation**
- Solutions for an inclusive, resilient, sustainable and modern built environment

## Industrial facilities in the energy transition

- Full-scale demonstration of **heat upgrade technologies** with supply temperature in the range 90-160°C
- Development and pilot demonstration of **heat upgrade technologies** with supply temperature in the range 150-250°C
- Development of high temperature **thermal storage for industrial applications**
- Industrial excess (**waste**) **Heat-to-Power conversion** based on organic Rankine cycles

# Cluster 5 - Budget allocation

Budget allocation per Destination  
(2021 and 2022)



Budget 2021-2022: € 3 billion

# Horizon Europe – Partnerships D2, D3 y D4

## Institutional Partnerships

- **Clean Hydrogen Europe (CHE)**

Separate calls

Multi Annual Work Programme (MAWP)

Annual Work Programme (AWP)

## Co-programmed Partnerships

- **Built4People** | People-centric sustainable built environment
- **Batteries** | For stationary applications and e-mobility

Calls in WorkProgramme of Cluster 5

\* **Built4People: Destination 4**

\* **Batteries: Destination 2**

## Co-funded Partnerships

- **Driving urban transitions to a sustainable future (DUT)**
- **Clean Energy Transition (CET)**

Separate Calls

# Co-fund “Driving Urban Transitions” (DUT)

## Partnership Concept



Positive Energy Districts and Neighbourhoods transforming the urban energy system



Downsizing District Doughnuts  
an integrated approach for urban greening and circularity transitions



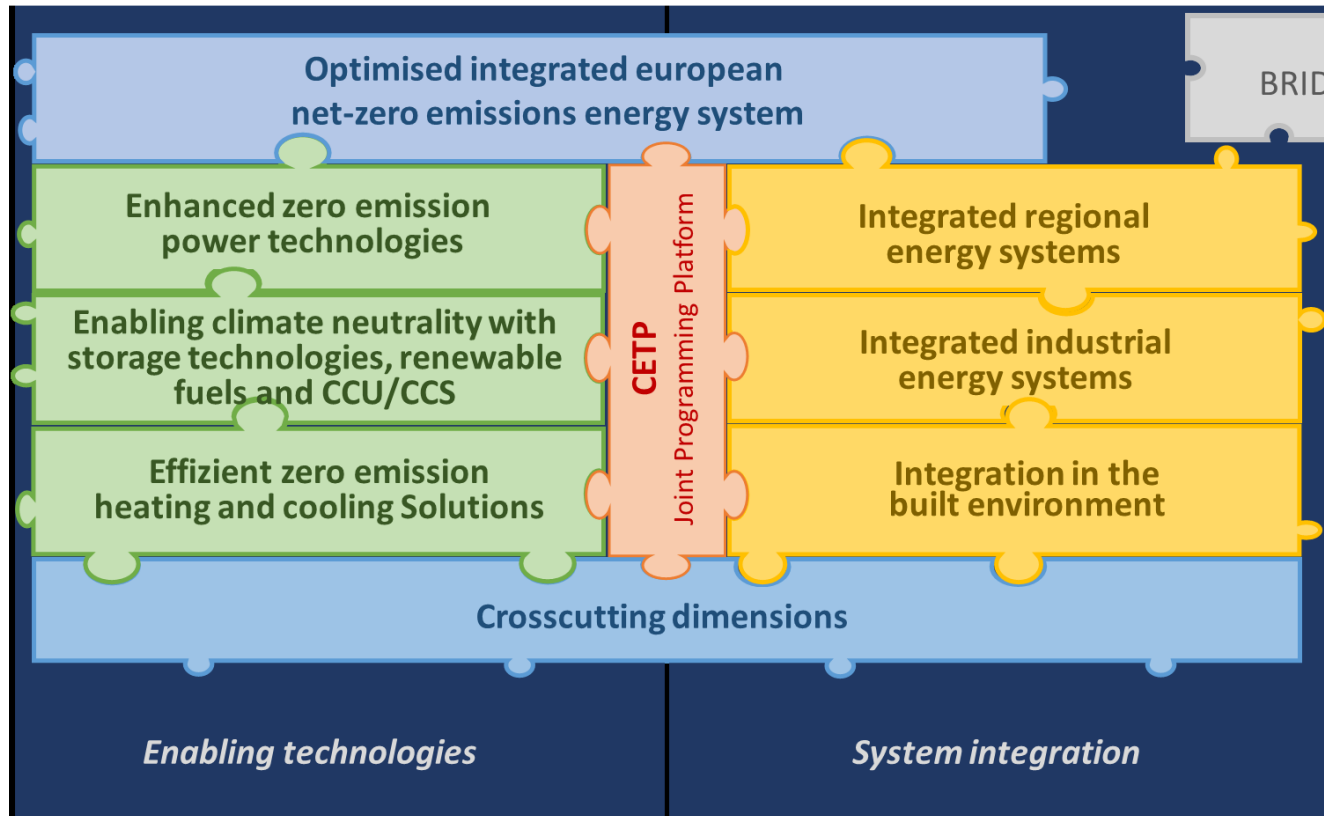
The 15 Minutes Cities rethinking the urban mobility system and space



<https://ipi-urbaneurope.eu/app/uploads/2019/02/SRIA2.0.pdf>

# Co-fund “Clean Energy Transition” (CET)

## Challenges



# Horizon Europe - Missions

## R&I Missions

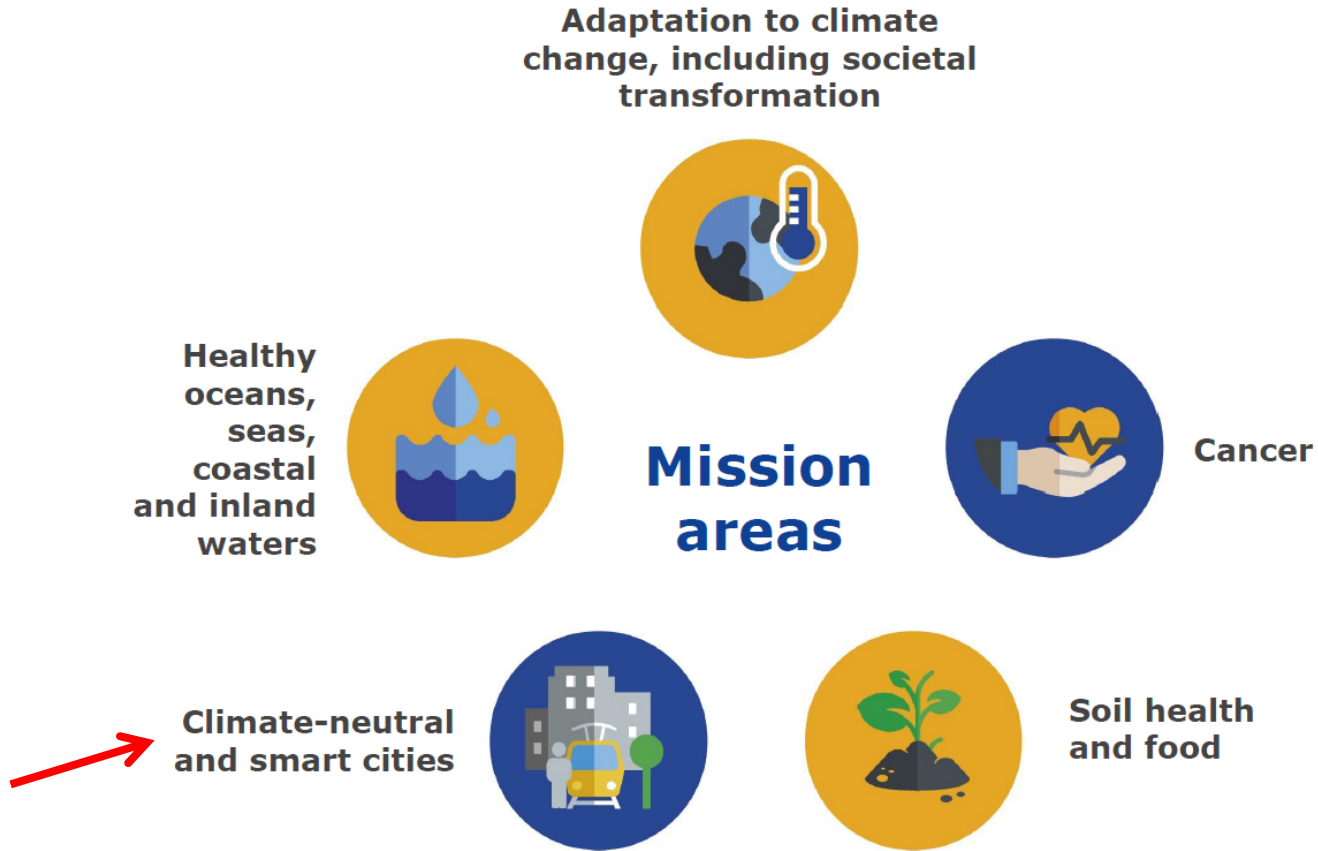
Relating EU's research and innovation better to society and citizens' needs; with strong visibility and impact



A mission is a portfolio of actions across disciplines intended to achieve a **bold and inspirational and measurable goal** within a set timeframe, with **impact** for society and policy making as well as relevance for a significant part of the European population and wide range of European citizens.

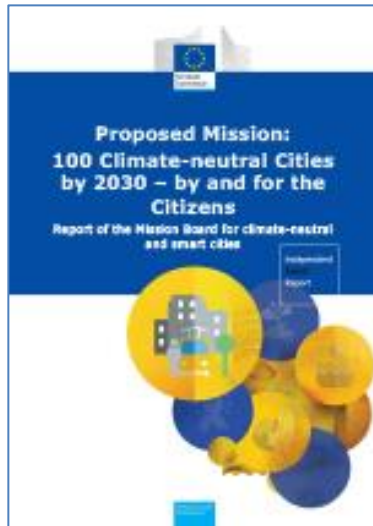
**Around € 5 billion** (max. 10% of budget of Pillar 2)  
for calls of missions in the first 3 years

# Horizon Europe – 5 Mission areas





# 100 Climate-neutral cities by 2030 by and for the citizens



[Report of the Mission Board](#)

- Process formalised in a **Climate City Contract**
- **Co-design and co-implementation with citizens**, as users, producers, consumers and owners
- **Removal of barriers** to participatory governance
- Help for cities to design an **investment strategy** and access to funding
- Cross-sectoral and **systemic transformation**, encompassing transport, energy, built environment, digitalisation, etc
- Strong **business case** for transforming how products are designed, produced, used and recycled

**WorkProgramme of R&D activities – Under preparation**

# Conclusions

Energy in Cluster 5 => Destination 3, Destination 4 and Destination 2

WP Cluster 5 + WP JTI CHE + Co-funds + WP Mission on Cities  
Draft WP Cluster 5

Publication of final version WP Cluster 5 foreseen in June

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Mantente informado a través del Portal español de Horizonte Europa

[www.horizonteeuropa.es](http://www.horizonteeuropa.es)



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