



Energía en Horizonte Europa



Jornada Horizonte Europa Castilla la Mancha

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EU Policy Strategies que hay que conocer

2020

8 Jul



14 Oct



19 Nov



Estrategia de Integración del Sistema Energético

A more **efficient** and
“circular” system

Where waste energy is captured and re-used

A **cleaner power system**

With more direct electrification of end-use sectors such as industry, heating of buildings and transport

A **cleaner fuel system**

For hard-to-electrify sectors like heavy industry or transport

https://ec.europa.eu/energy/topics/energy-system-integration/eu-strategy-energy-system-integration_en

Estrategia de Hidrógeno

2024

- **6 GW** of renewable hydrogen electrolyzers
- Replace existing hydrogen production
- Production of **up to 1 million tonnes** of renewable H2



2030

- **40 GW** of renewable hydrogen electrolyzers
- New application in **steel and transport**
- Production of **up to 10 million tonnes** of renewable H2



2050

- **Scale-up to all hard-to-decarbonise sectors**
- **Deployment at large scale**

https://ec.europa.eu/energy/topics/energy-system-integration/hydrogen_en

Estrategia Renovation Wave

Prioridades de la Estrategia de Renovación



Tackling **energy poverty** and **worst-performing buildings**



Renovation of **public buildings** such as schools, hospitals and public administrations



Decarbonisation of **heating and cooling**

The new European Bauhaus (NEB)

- ✓ Sustainability (including circularity)
- ✓ Aesthetic
- ✓ Inclusiveness (including affordability & accesibility)

https://ec.europa.eu/energy/sites/ener/files/eu_renovation_wave_strategy.pdf

https://europa.eu/new-european-bauhaus/index_en

Estrategia Energías Renovables Marinas

Principales elementos de la estrategia



Inversiones

Cooperación Regional



Seguridad jurídica



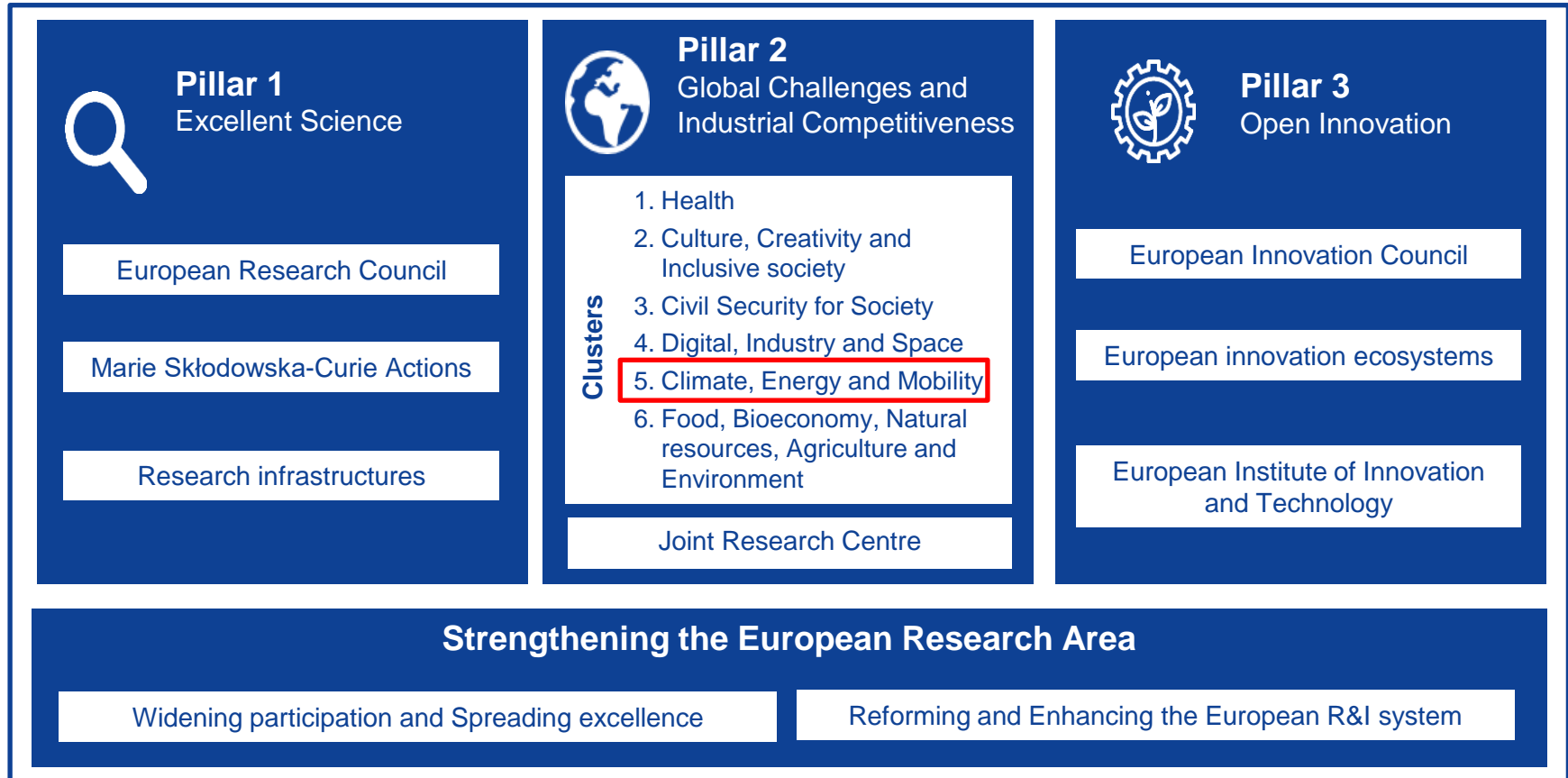
Fortalecer cadena de valor e Innovación

Ambitious Targets	2020	2030	2050
EU offshore wind energy capacity	12 GW	60 GW	300 GW
Ocean energy capacity (e.g. wave, tidal)	13 MW	1 GW	40 GW

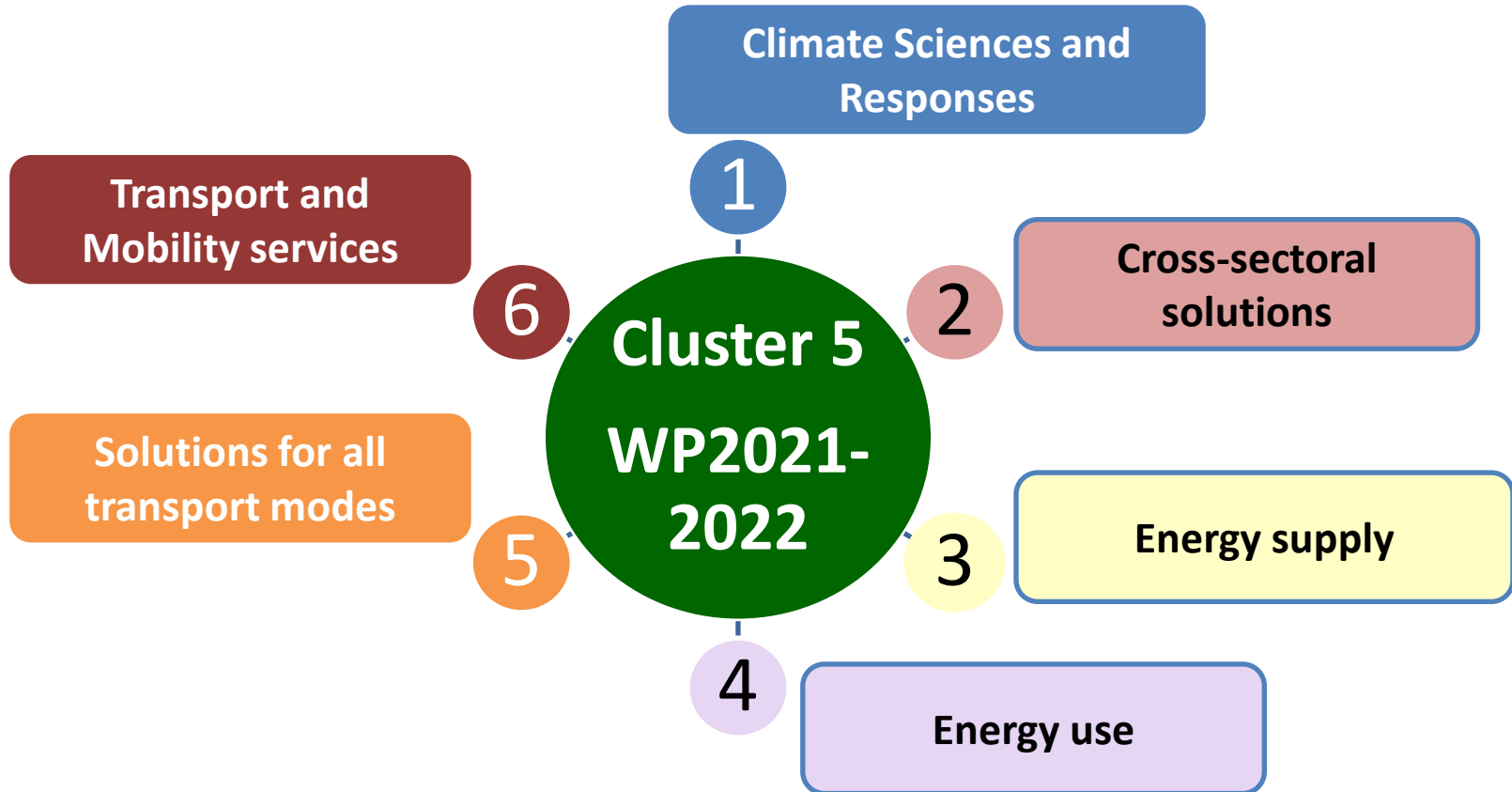
https://ec.europa.eu/energy/topics/renewable-energy/eu-strategy-offshore-renewable-energy_en

Horizon Europe (2021-2027)

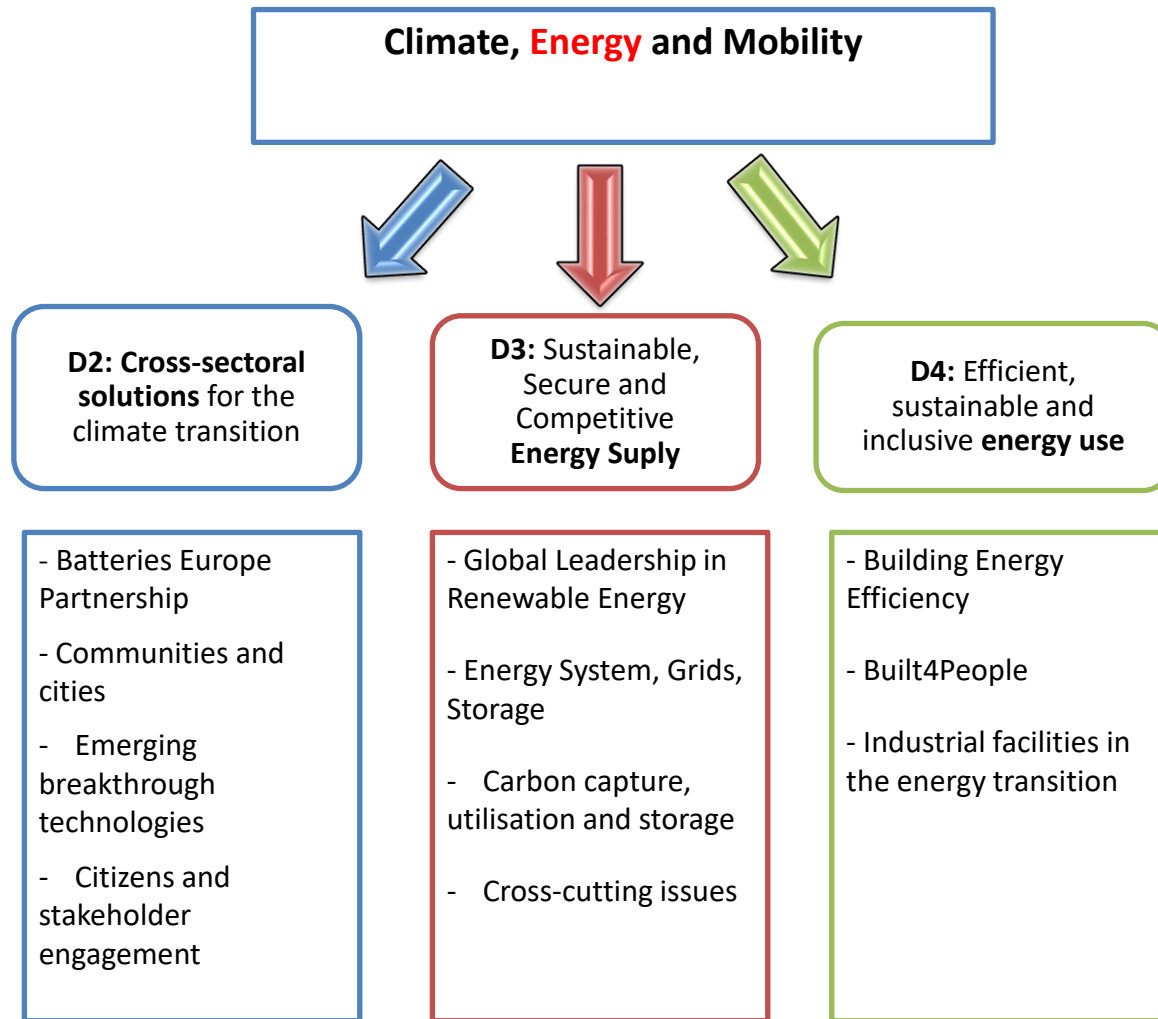
Estructura



Cluster 5 – 6 Destinations



Cluster 5: Climate, **Energy**, Mobility



Destination 2: Cross-sectoral solutions for the climate transition

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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

Borrador

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

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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

Borrador

Destination 4: Efficient, sustainable and inclusive energy use

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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

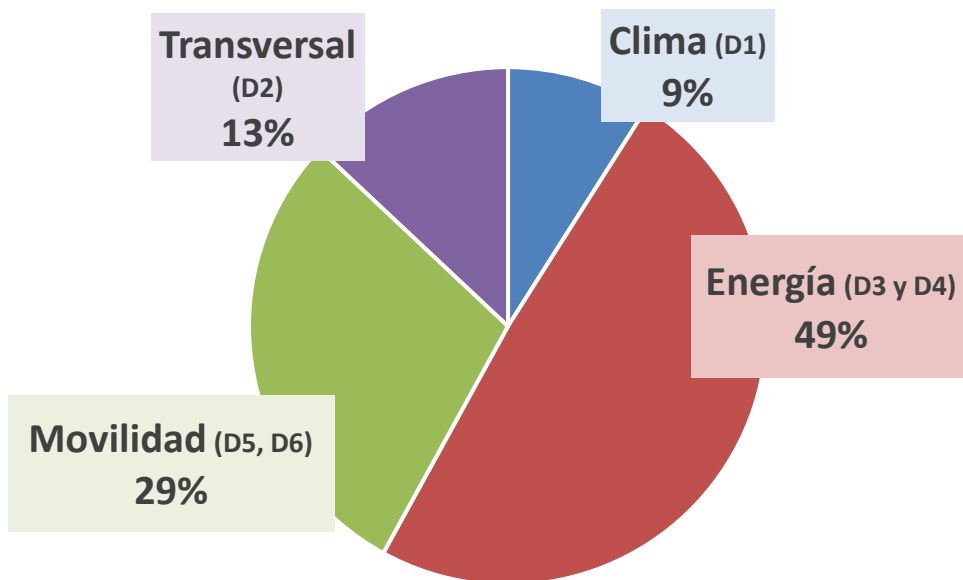
Industrial facilities in the energy transition

- 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

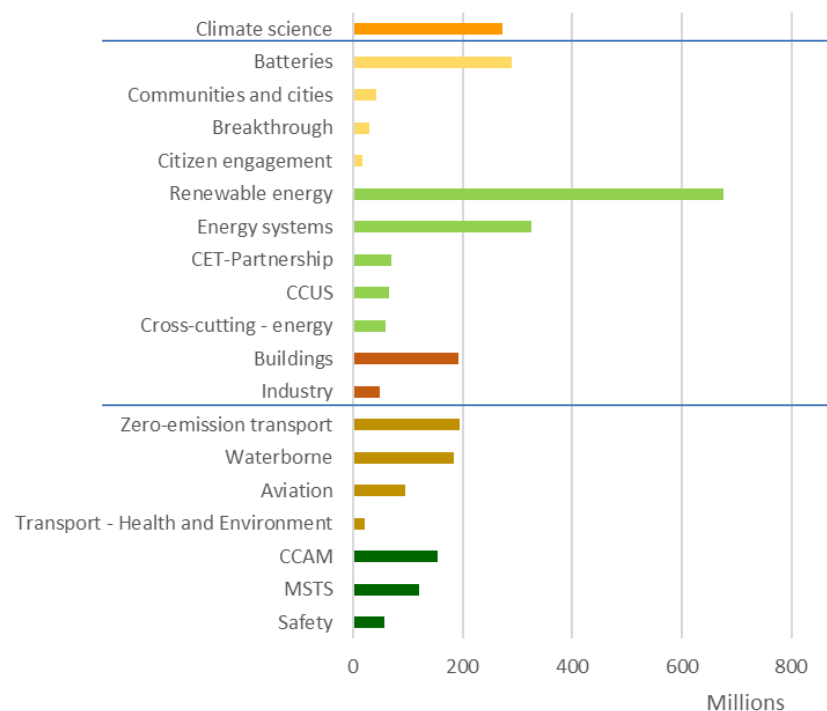
Cluster 5 - Budget allocation

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Budget allocation per Destination
(2021 and 2022)



Budget allocation per thematic heading
(2021 and 2022)



Horizon Europe – Partnerships D2, D3 y D4

Institutional Partnerships

- **Clean Hydrogen Europe (CHE)**

Lanzan sus propias convocatorias
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

Convocatorias en WP del Cluster 5
* **Built4People: Destination 4**
* **Batteries: Destination 2**

Co-funded Partnerships

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

Lanzan sus propias convocatorias

Partenariado “Clean Hydrogen Europe”

Antecedentes y Presupuestos:

FP7 (2008-2013) => 470 M€ from EC

Horizon 2020 (2014-2020) => 665 M€ from EC

Horizon Europe (2021-2027) => **1.000 M€ from EC pendiente de aprobación**

Documentos de trabajo:

SRIA – Strategic Research and Innovation Agenda

MAWP – Programa de Trabajo Multianual – **en proceso de elaboración**

Partenariado “Clean Hydrogen Europe” – Multiannual Work Programme (MAWP) draft

PILLAR I: Renewable H2 Production

Electrolysis

Other routes of H2 production

Large-scale Storage

Develop H2 infrastructure (HRS)

H2 in the Natural Gas Grid

Liquid H2 Carriers

Improving existing H2 Transport Means

Compression, Purification and Metering Solutions

Transport Applications: Fuel Cell System, H2 storage tank, Heavy-duty vehicles, Waterborne, Rail and Aviation

Clean Heat and Power: Stationary fuel cells; Turbines, boiler and burners

PILLAR III and IV: H2 End uses

Horizontal Activities

Cross-Cutting Issues: PNR, safety, education, LCSA, awareness

H2 Valleys

Hydrogen Supply Chains

A tener en cuenta

- **IMPORTANTE** formar parte del Grupo Industrial o Grupo de Investigación:

“Hydrogen Europe” – Representa a la Industria hydrogeneurope.eu

“Hydrogen Europe Research” – Representa a los Grupos de Investigación

Principal ventaja:

- Participar en la elaboración de los Programas de Trabajo anuales (AWP), siguiendo la planificación estratégica elaborada en el MAWP
- **Convocatorias Anuales** (excepción este año 2021-2022)
- En principio **mismas condiciones de participación que en Horizon Europe**, pero las convocatorias pueden incluir criterios de elegibilidad adicionales

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

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

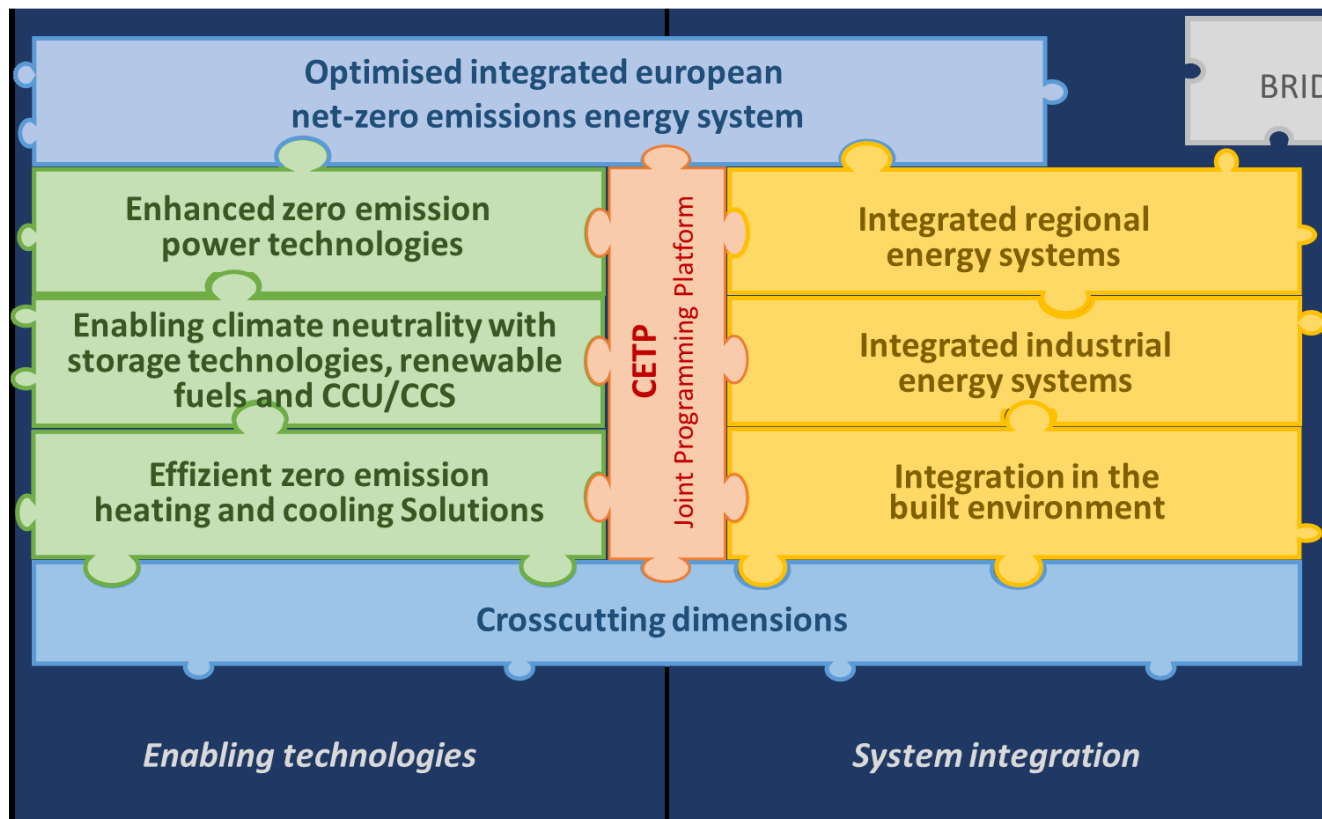


<https://jpi-urbaneurope.eu/app/uploads/2019/02/SRIA2.0.pdf>

Co-fund “Clean Energy Transition” (CET)

Borrador

Challenges



Horizon Europe - Missions

Misiones de investigación e innovación

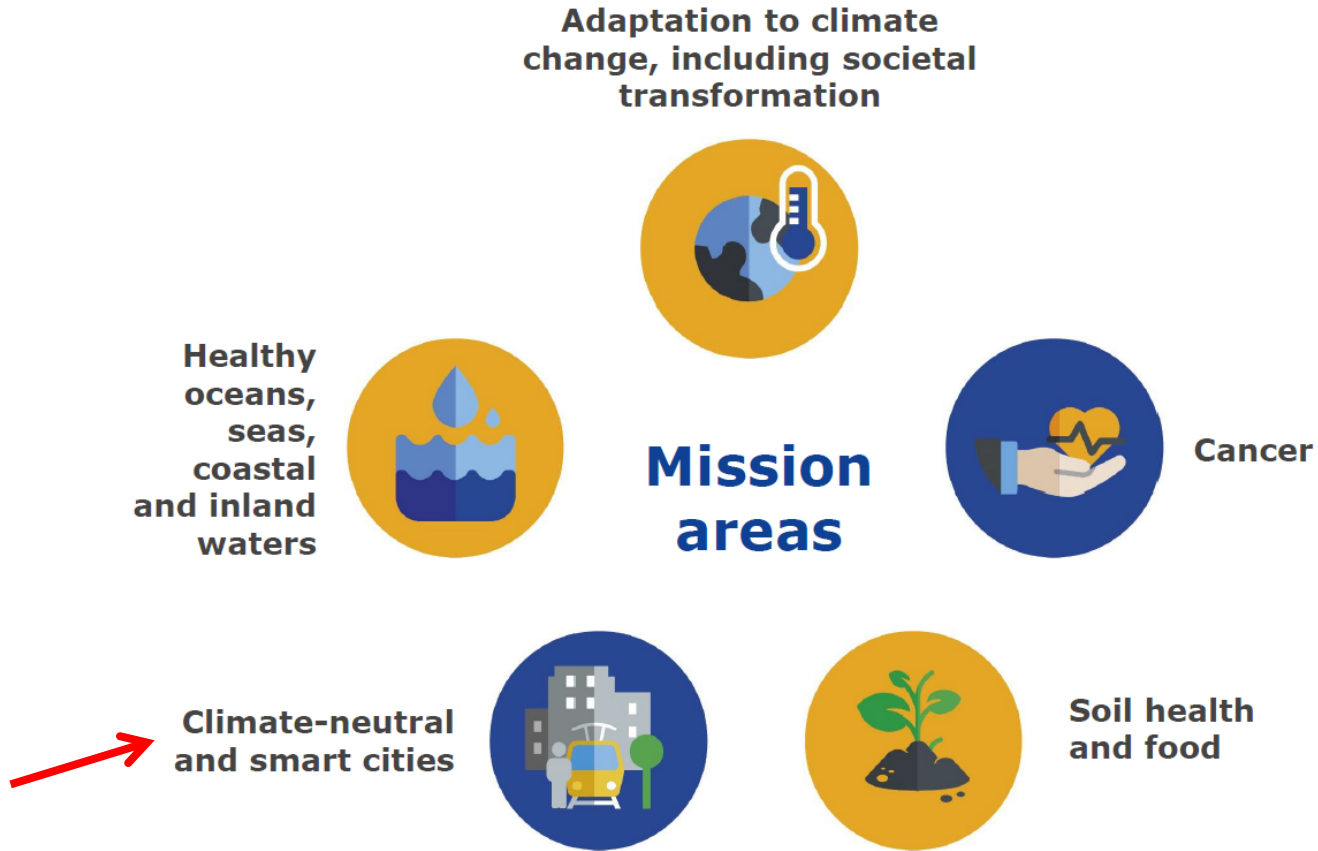
Relacionar mejor la investigación e innovación de la UE con las necesidades de la sociedad y la ciudadanía, con una gran visibilidad e impacto.



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.

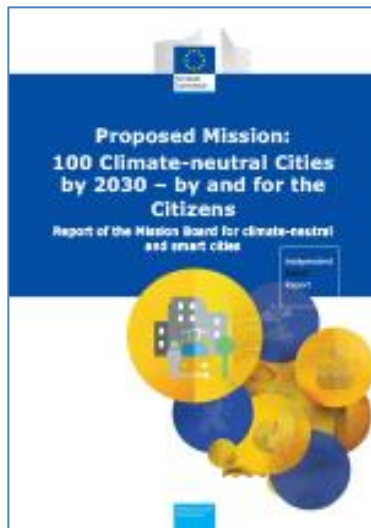
€ 5 billion (tbc) (max. 10% del presupuesto del Pilar 2)
para convocatorias de misiones en los 3 primeros años

Horizon Europe – 5 Mission areas



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

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[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

Identification of R&D activities to be implemented in the first Work Programme (2021-2022) of Horizon Europe

Conclusiones

Cluster 5 Energía => Destination 3, Destination 4 y parte Destination 2

WP Cluster 5 + WP JTI CHE + Co-funds + WP Misión Ciudades
[Enlace borrador WP Cluster 5](#)

Publicación versión final WP Cluster 5 prevista en abril-mayo

Para cualquier consulta

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[CDTI Listas de Distribución](#)