



#HorizonEU

THE EU RESEARCH & INNOVATION PROGRAMME

2021 – 2027

SCHILD PHILIPPE

Horizon Europe: Funding and networking
opportunities for renewable energy

30/09/2025

Research and
Innovation

HORIZON EUROPE

EURATOM

SPECIFIC PROGRAMME: EUROPEAN DEFENCE FUND

*Exclusive focus on
defence research
& development*

Research
actions

Development
actions

SPECIFIC PROGRAMME IMPLEMENTING HORIZON EUROPE & EIT*

Exclusive focus on civil applications



Pillar I EXCELLENT SCIENCE

European Research Council

Marie Skłodowska-Curie

Research Infrastructures



Pillar II GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

- Health
- Culture, Creativity & Inclusive Society
- Civil Security for Society
- Digital, Industry & Space
- **Climate, Energy & Mobility**
- Food, Bioeconomy, Natural Resources, Agriculture & Environment

Joint Research Centre



Pillar III INNOVATIVE EUROPE

European Innovation
Council

European Innovation
Ecosystems

European Institute of
Innovation & Technology*

WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

Widening participation & spreading excellence

Reforming & Enhancing the European R&I system

Fusion

Fission

Joint
Research
Center

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

European Partnerships

INSTITUTIONAL

Transforming Europe's rail system

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

Integrated Air Traffic Management

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

Clean Aviation

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

Clean Hydrogen

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

Total: 4.195 bn€ EU contribution

CO-FUNDED

CET | Clean Energy Transition

(210 M€ EU
contribution)

DUT | Driving urban transitions to a sustainable future

(130 M€ EU
contribution)

Total: 0.34 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)

Solar PV Partnership

(240 M€ EU contribution; 240M€ private contributions)

Total: 3.19 bn€ EU contribution

Total: 7.725 bn€



European
Commission

Implementation of cluster 5 (through WPs)

Work programme 2021-2022

- **486 funded projects** with a total EU contribution of **3017 M€**



All projects have been signed

Work programme 2023-2024

- **~520 funded projects** with a total EU contribution of **~2415 M€**



All calls are closed; some 2024 projects still to be signed

Work programme 2025

- **~180 funded projects** with a total EU contribution of **~1145 M€**



Calls open on 15 May 2025

Work programme 2026-2027

- **250-300 funded projects** with a total EU contribution of **2300 - 2400 M€**



Work programme is being developed; calls to be launched end of 2025

CLIMATE, ENERGY AND MOBILITY

Cluster 5

Work programme 2025



EU Commission policy priorities

A new plan for Europe's sustainable prosperity and competitiveness

Making business easier to foster economic growth, supporting EU's competitive industries and creating quality jobs, developing a circular and resilient economy that puts research and innovation at its heart and accelerates investment, tackling the skills and labour gaps and leading the way in digital technology innovation.

A new era for European Defence and Security

Ensuring that European citizens are safer and more secure by building a European Defence Union, addressing all threats online and offline and being prepared to react to crises. Strengthening our common borders and managing migration fairly and firmly.

Supporting people, strengthening our societies and our social model

Sustaining and improving the quality of life we enjoy today in Europe by promoting social fairness in the modern economy, strengthening solidarity among citizens by reuniting our societies and supporting young people, and ensuring equal opportunities for all.

Sustaining our quality of life: Food security, water and nature

Building a competitive and resilient agriculture and food system and safeguarding biodiversity to support our farmers and safeguard our healthy food. Adapting and preparing for a changing climate to be ready and help those affected.

Protecting our democracy, upholding our values

Protecting and defending democracy and increasing societal resilience and preparedness, strengthening the rule of law for a fair and well-functioning society, championing civic engagement and participation to bring citizens' ideas to the heart of policy-making.

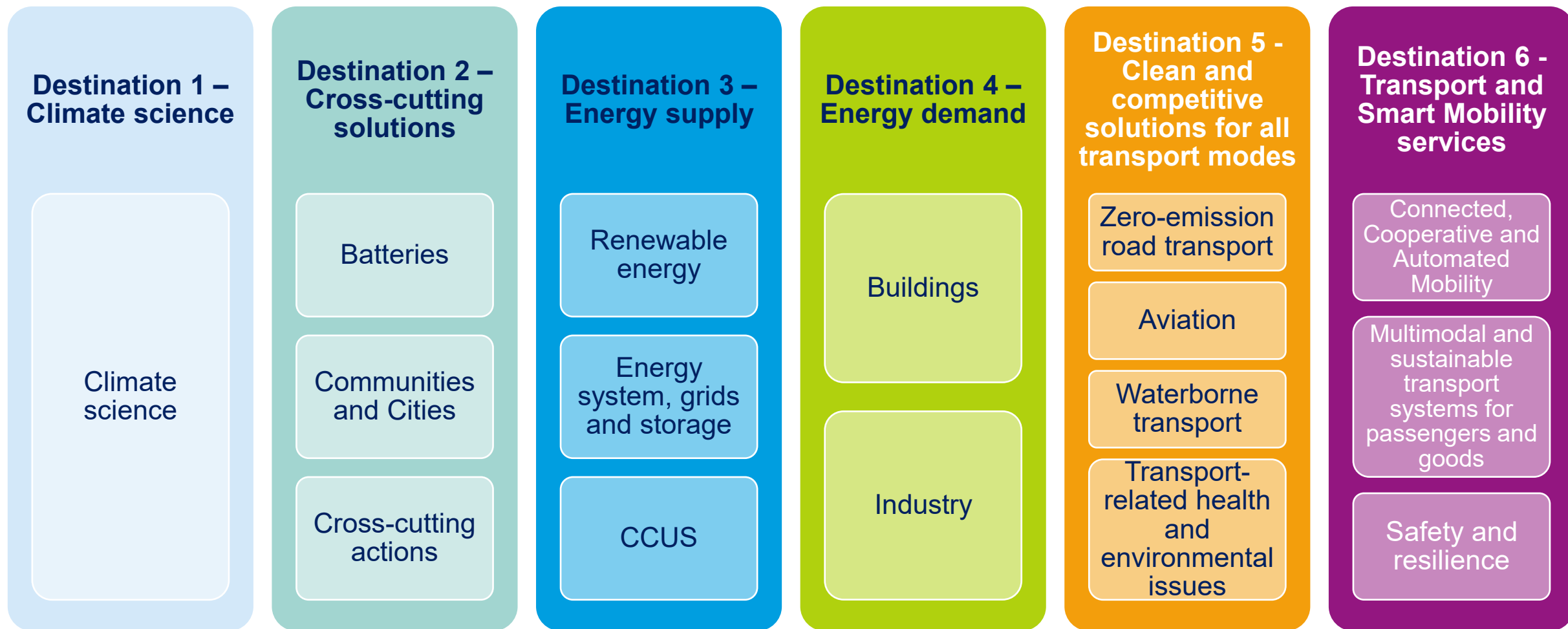
A global Europe: Leveraging our power and partnerships

Working on enlarging the EU to increase our influence on the global stage; focusing on our wider neighbourhood to promote peace, partnerships and economic stability; pursuing a new economic foreign policy and reforming the international system to make it fit for today's world.

Delivering together and preparing our Union for the future

Developing a simpler, more impactful EU budget to deliver funds where they matter the most; implementing reforms to ensure the proper functioning of a larger union and strengthening the partnership between the European Commission and the European Parliament to help us deliver more effectively together.

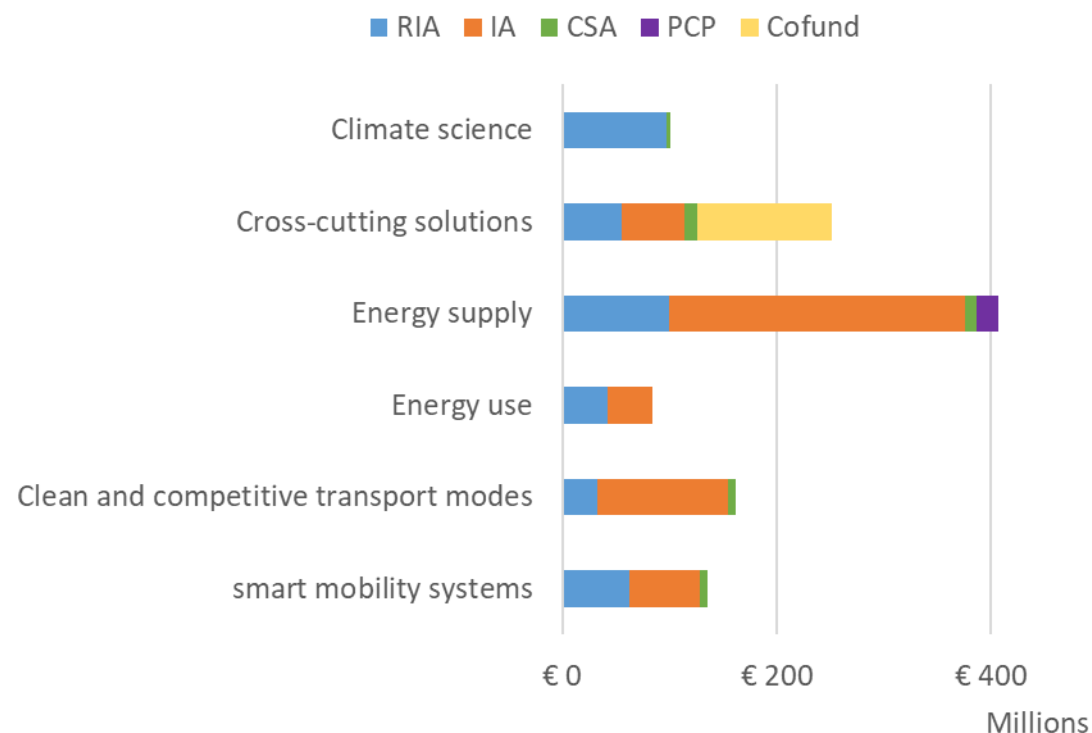
Cluster 5 Work programme 2025 - overview



Cluster 5 Work programme 2025 - overview

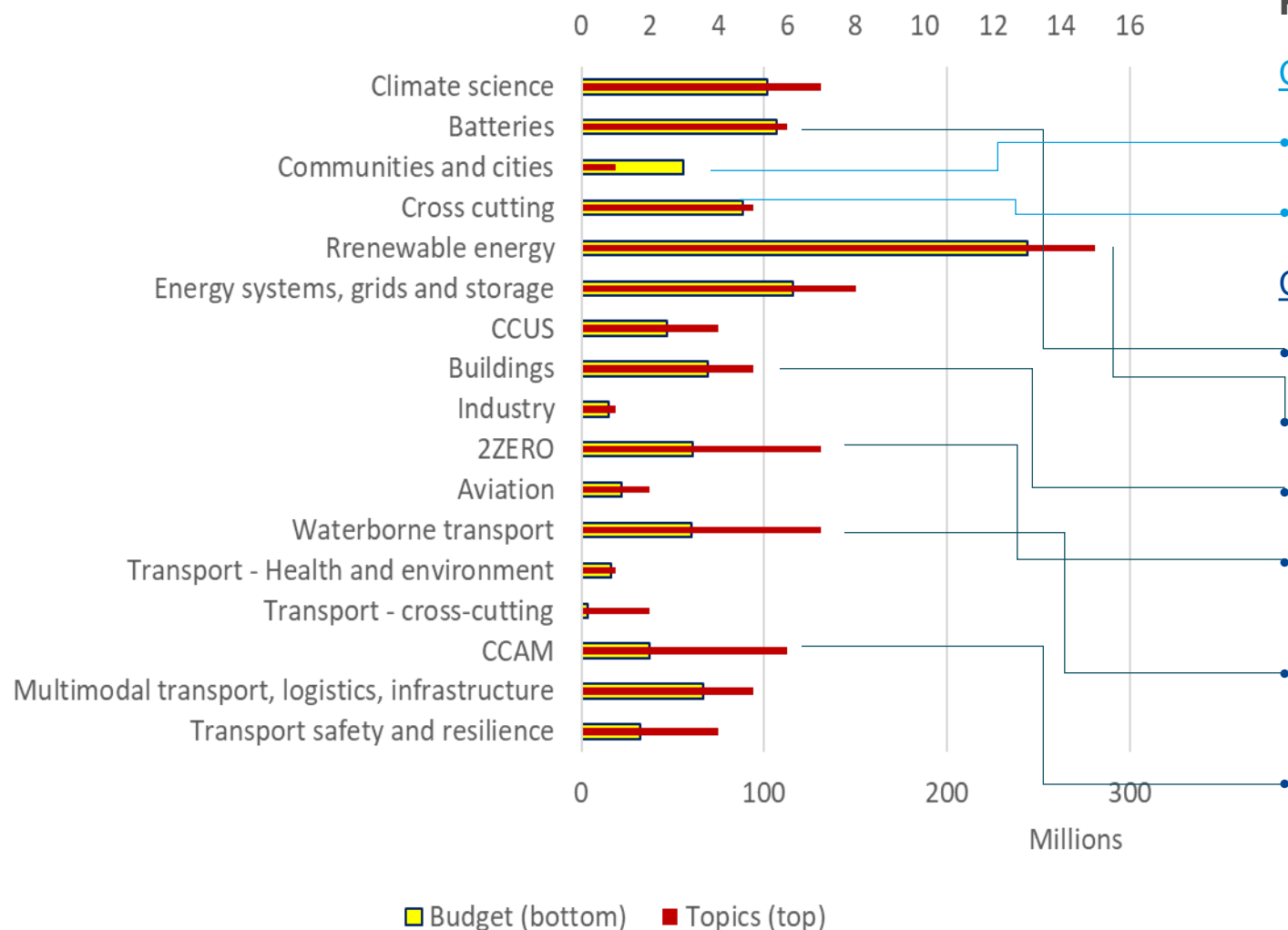
	Budget (Mio €)	Share of total	Number of topics	Share of total
Climate science	101.5	9%	7	8%
Cross-sectorial solution	251.5	22%	12	14%
Energy supply	407.0	36%	27	31%
Energy use	84.0	7%	6	7%
Clean and competitive transport modes	162.6	14%	19	22%
Smart mobility systems for people and goods	136.0	12%	15	17%
TOTAL	1 142.6		86	

EU contribution per Destination and type of action (in Mio EUR)



Cluster 5 Work programme 2025 - budgets

EU contribution per thematic area (number of topics and budget in Mio EUR)



31 out 86 topics (36% of all) with a total budget of 461 M€ (40% of total) implement European Partnerships

Co-funded Partnerships:

- **Driving Urban Transition:** 1 topic (56 M€)
- **Clean Energy Transition:** 1 topic (69 M€)

Co-programmed Partnerships:

- **Batteries:** 6 topics (EUR 107 million)
- **Solar PV:** 2 topics (EUR 32 million)
- **Built4People:** 2 topics (EUR 27 million)
- **Towards Zero-Emission Road Transport (2ZERO):** 6 topics (EUR 59 million)
- **Zero-Emission Waterborne Transport:** 6 topics (EUR 58 million)
- **Connected, Cooperative and Automated Mobility:** 6 topics (EUR 37.5 million)

Cluster 5 call structure (WP 2025)

Blue: Energy-related calls
Green: Transport-related calls
Red: Climate-related calls

		6/05/2025	5/08/2025	4/11/2025	3/02/2026
D2, D3	HORIZON-CL5-2025-01-Two-Stage	02/09/2025			31/03/2026
D2, D3	HORIZON-CL5-2025-02	02/09/2025			
D5	HORIZON-CL5-2025-03-Two-Stage	04/09/2025			14/04/2026
D5, D6	HORIZON-CL5-2025-04	04/09/2025			
D1	HORIZON-CL5-2025-05-Two-Stage	04/09/2025			31/03/2026
D1	HORIZON-CL5-2025-06	24/09/2025			
D2, D6	HORIZON-CL5-2026-01			20/01/2026	
D3, D4	HORIZON-CL5-2026-02			17/02/2026	

HORIZON-CL5-2026-02-D3-14

Development of innovative solutions strengthening the security of renewable energy value chains

Rationale

- Ensure the **security** of Europe's clean energy system

Gaps covered

- **Improve critical aspects** of specific renewable energy technologies and their respective value chains impacting EU's energy security
- **Broaden** knowledge in sustainability, awareness, skills and value chain complexity

HORIZON-CL5-2026-02-D3-14: Development of innovative solutions strengthening the security of renewable energy value chains	CSA	6M€	2M€
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Per topic

Per project

Photovoltaics

Rationale

- Balance support to R&I challenges in downstream and upstream parts of the PV value chain
- Prioritise areas where the EU could have a competitive advantage
- Contribute towards the targets of REPower EU, the EU Solar Strategy and NZIA, as well as the EU action plan for digitalising energy

Gaps covered

- Support areas which were not funded in previous Horizon Europe WPs (e.g. inverters and flexibility in PV systems, Silicon growth technologies)

Specificities

- The topics implement the **co-programmed European Partnership for Innovation in Photovoltaics (EUPI-PV)**

Photovoltaics

HORIZON-CL5-2026-02-D3-10: Towards commercialisation of Perovskite PV and development of dedicated manufacturing equipment (EUPI-PV Partnership)	IA	24M€	8M€
HORIZON-CL5-2026-02-D3-12: Extending the lifetime of crystalline silicon PV modules (EUPI-PV Partnership)	RIA	8M€	4M€

Per topic

Per project

Advanced biofuels and renewable fuels

HORIZON-CL5-2026-02-D3-01: Large-scale production of liquid **advanced biofuels and renewable fuels** of non-biological origin

- **Large scale production** of ready-to-deploy advanced biofuels and/or RFNBOs, engaging feedstock developers & suppliers, technology developers, fuel suppliers, end users, national bodies, public or private funding authorities
- Production from various **EU sustainable** biomass feedstocks and/or non-biological origin feedstocks
- Real-size feedstock impact on **plant design**, increasing energy density/homogenization/ standardization
- LCA of **production route, reference cases** for ready-to-build, revamp/reuse, operate full-scale plants / existing demos
- **Exploitation** for strong investment and full value chain business case, commercial plant **economic viability**, permitting, **funding**, one **local economic business** case, impact on environment and climate

HORIZON-CL5-2026-02-D3-02: Competitiveness, energy security and integration aspects of **advanced biofuels and renewable fuels** of non-biological origin value chains

- Assess **energy security** and **industrial competitiveness** aspects of value chains for advanced biofuels and RFNBOs, in view of the new global situation
- Detailed value chain **analysis** and development of **future scenarios**, macroeconomic modelling, and DSS
- **R&I actions** to improve energy security and industrial competitiveness, **implement** R&I and new standards
- Coordinate efforts for **win-win integrated solutions** engaging all relevant stakeholders
- **Multidisciplinary issues** in renewable fuel production, carbon removals, CO2 trading & valorization, sustainable farming, fuel standardization, trade-off/synergies of carbon farming and LCA

Solar Thermal Energy

HORIZON-CL5-2026-02-D3-05: Demonstration of thermal energy storage solutions for solar thermal plants and systems

- Demonstration of innovative **Thermal Energy Storage (TES) solutions** in:
 - Concentrated Solar Power (CSP)
 - Solar thermal heat and/or cold
- Substantial improvements compared to state of the art in terms of performance, cost-effectiveness, and life-span
- Main outcomes:
 - Technology providers benefit from
 - successful demonstration and de-risking of TES that improve dispatchability of solar thermal energy
 - better understanding of the bankability of solar thermal solutions leading to improved access to financing
 - Electricity grid operators have access to reliable options to cope with renewables intermittency

Biofuels, Geothermal, Hydropower, Solar Thermal

		Per topic	Per project
HORIZON-CL5-2026-02-D3-01: Large-scale production of liquid advanced biofuels and renewable fuels of non-biological origin	IA	33M€	11M€
HORIZON-CL5-2026-02-D3-02: Competitiveness, energy security and integration aspects of advanced biofuels and renewable fuels of non-biological origin value chains	RIA	8M€	4M€
HORIZON-CL5-2026-02-D3-05: Demonstration of thermal energy storage solutions for solar thermal plants and systems	IA	15M€	7.5M€

Wind energy

HORIZON-CL5-2026-02-D3-07: Improved reliability and optimised operations and maintenance for wind energy systems

- Solutions to improve reliability of wind energy systems and to optimise O&M
- New methods and tools (monitoring techniques and innovative sensors) for condition and health monitoring
- Improved interoperability, decision-making support tools

HORIZON-CL5-2026-02-D3-08: Understand and minimise the environmental impacts of offshore wind energy

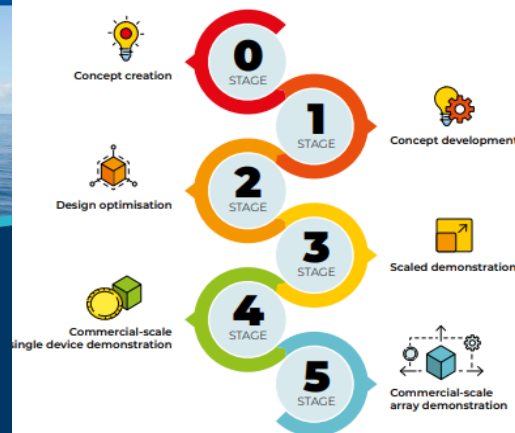
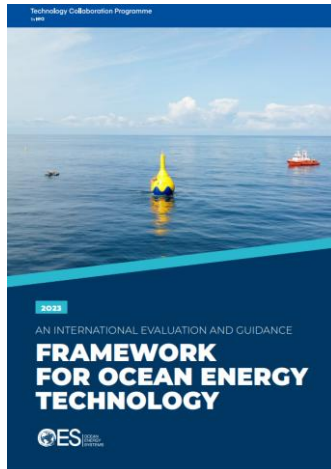
- Better understanding of the cumulative environmental impacts of offshore wind energy deployment
- Deployment of field monitoring activities
- Modelling capacity and environmental impact assessments of future offshore wind deployment
- Identification of areas where wind energy deployment is particularly suitable
- Strategies, test, and demonstration of technologies that counteract the environmental impact of offshore wind energy systems

Ocean energy

HORIZON-CL5-2026-02-D3-13: De-risking **wave** energy technology development through transnational pre-commercial procurement of wave energy research and development

The EuropeWave PCP action supported the development of several wave energy devices in a stage-gate process to Stage 3 (approximately TRL 6).

The scope of this action is to bring wave energy technologies at Stage 4 approximately TRL7/8). Designs must achieve completion of Stage 4 activities of the IEA-OES Framework Evaluation Areas.



Bridging the gap to commercialisation of wave energy technology using pre-commercial procurement

Duration: 65 months (01/01/2021 to 31/05/2026)

PCP Budget: €19,600,000

Total Budget: €22,702,112

Programme: H2020-EU.3.3.2.

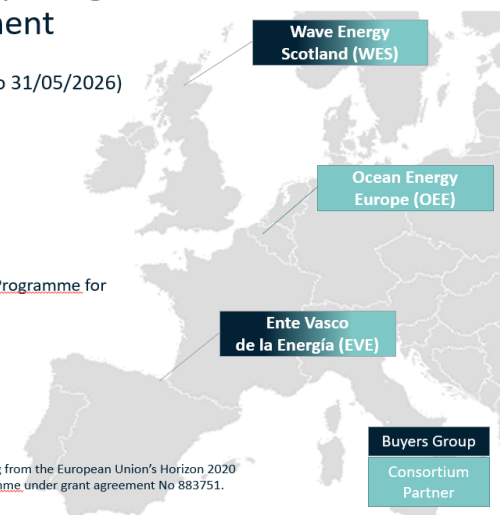
[Low-cost, low-carbon energy supply]

Topic: LC-SC3-JA-3-2019

[European Pre-Commercial Procurement Programme for Wave Energy Research & Development]



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 883751.



Wind, Ocean

		Per topic	Per project
HORIZON-CL5-2026-02-D3-07: Improved reliability and optimised operations and maintenance for wind energy systems	RIA	15M€	5M€
HORIZON-CL5-2026-02-D3-08: Understand and minimise the environmental impacts of offshore wind energy	RIA	15M€	5M€
HORIZON-CL5-2026-02-D3-13: De-risking wave energy technology development through transnational pre-commercial procurement of wave energy research and development	PCP	20M€	20M€

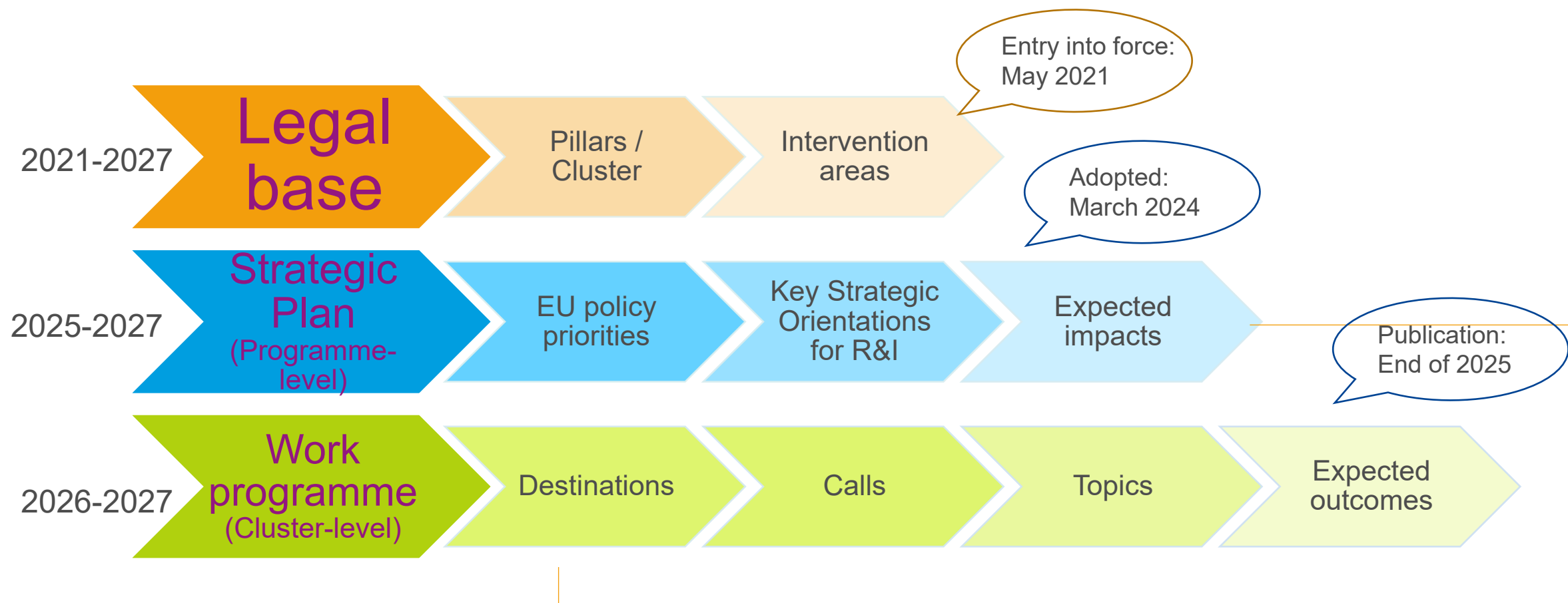
CLIMATE, ENERGY AND MOBILITY

Cluster 5

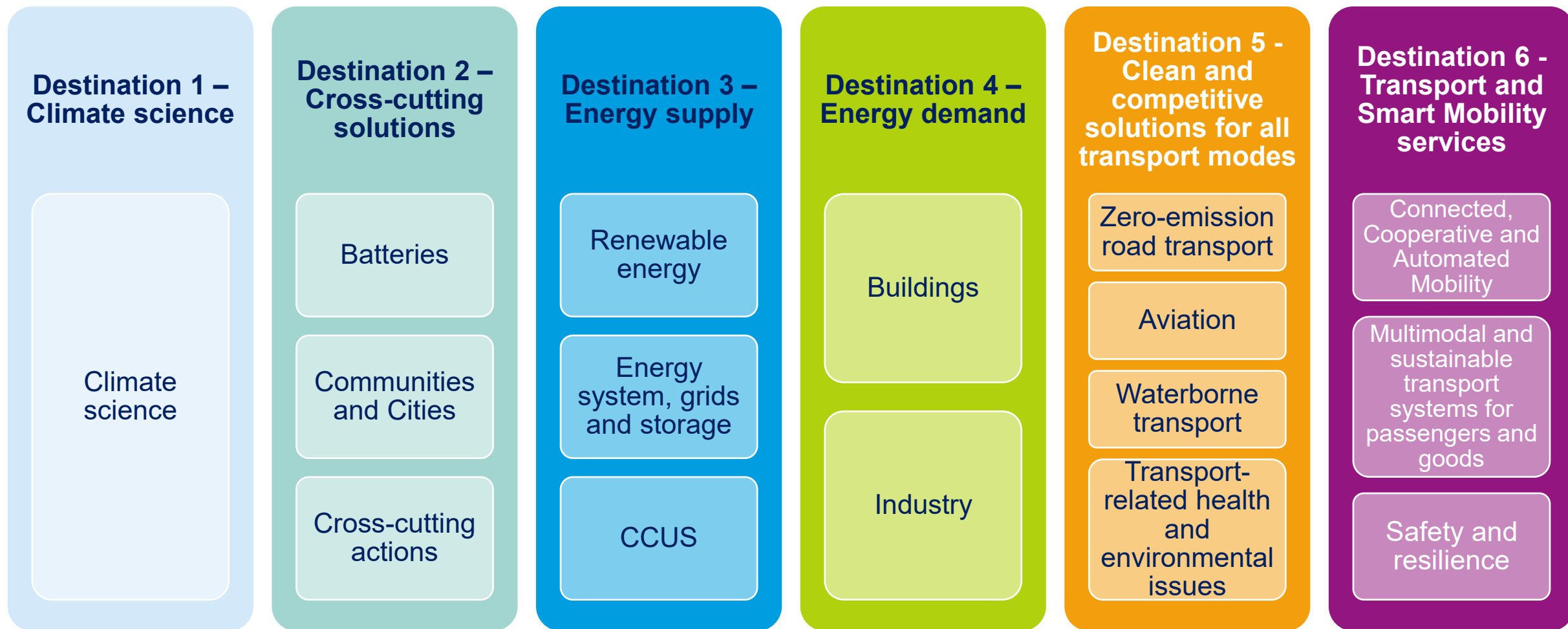
Work programme 2026-2027



Programme intervention logic



Cluster 5 Work programme - overview



Cluster 5 Work programme 2026-2027 - Simplification

- **Work programme, topics and projects:** reduce text by focussing on essentials; give sufficient freedom to applicants; go for mix of bigger and smaller projects; prepublication

→ **Less topics:** For RES 18 topics for 2 years and only 1 topic per areas (a part for PV and fuels)

- **Application and evaluation:** attention to call deadlines; simplify proposal template and reporting requirements; 2-stage evaluation and lump sum approach has pros and cons; attention with blind evaluation;

RES: Different ways to co-fund SET Plan priorities

- SET Plan: Coordination National and EU funding on clean tech support : alignment with Commission priorities (Competitiveness Compass)
- Co-funding of a programme (or portfolio of projects) through a large grant, with cascading Funding
 - Top-down priority setting, i.e. only open to specific areas or topics, such as renewable fuels or wind
- Co-funding single (or a small cluster of) demonstration project(s), led by industry, with national co-funding and EU top-up
 - Bottom-up approach, open to all SET Plan priorities
- Instruments can be Cofund Actions, IA or RIA, public or private led

➔ AREAS: RENEWABLE FUELS, WIND & OES

Cluster 5 Work programme 2026-2027 – New Policies

- **Clean Industrial Deal Communication:**
➔ Dedicated topic, fully bottom up, 300M€ from Cluster 5
- **SET-Plan:** New governance
- **Transparency:** <https://ec.europa.eu/transparency/comitology-register/screen/meetings/CMTD%282025%29972/consult?lang=en>