

CLUSTER 5 „CLIMATE, ENERGY AND MOBILITY“

AUSSCHREIBUNGEN 2021/2022

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PROJEKTTYPEN:

RIA – Research and Innovation Action

IA – Innovation Action

CSA – Coordination and Support Action

COFUND – Programme Co-fund Action

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DESTINATION 1 – CLIMATE SCIENCES AND RESPONSES FOR THE TRANSFORMATION TOWARDS CLIMATE NEUTRALITY

Call - Climate sciences and responses (HORIZON-CL5-2021-D1-01) Deadline: 14.9.2021

- HORIZON-CL5-2021-D1-01-01: Improved understanding of greenhouse gas fluxes and radiative forcers, including carbon dioxide removal technologies - (RIA), *expected EU contribution per project around 8 million Euro, for 3 projects*
- HORIZON-CL5-2021-D1-01-02: Modelling the role of the circular economy for climate change mitigation - (RIA), *expected EU contribution per project around 5 million Euro, for 3 projects*
- HORIZON-CL5-2021-D1-01-03: Maximising the impact and synergy of European climate change research and innovation - (CSA), *expected EU contribution per project 4 to 5 million Euro, for 2 projects*
- HORIZON-CL5-2021-D1-01-04: Enhanced integrated assessment in pursuit of global climate goals - (RIA), *expected EU contribution per project around 5 million Euro, for 3 projects*
- HORIZON-CL5-2021-D1-01-05: Better understanding of the interactions between climate change impacts and risks, mitigation and adaptation options - (RIA), *expected EU contribution per project 6 to 7 million Euro, for 3 projects*
- HORIZON-CL5-2021-D1-01-06: Supporting and standardising climate services - (CSA), *expected EU contribution per project around 9 million Euro, for 1 project*
- HORIZON-CL5-2021-D1-01-07: Improved economic methods for decision-making on climate and environmental policies - (RIA), *expected EU contribution per project around 3 million Euro, for 2 projects*
- HORIZON-CL5-2021-D1-01-08: Restoration of natural wetlands, peatlands and floodplains as a strategy for fast mitigation benefits; pathways, trade-offs and co-benefits - (RIA), *expected EU contribution per project 6 to 7 million Euro, for 3 projects*
- HORIZON-CL5-2021-D1-01-09: The contribution of forest management to climate action: pathways, trade-offs and co-benefits - (RIA), *expected EU contribution per project around 6 million Euro, for 3 projects*

Call - Climate sciences and responses (HORIZON-CL5-2022-D1-01-two-stage) Deadlines: 10.2.2022 (1st stage), 27.9.2022 (2nd stage)

- HORIZON-CL5-2022-D1-01-01-two-stage: Carbon Dioxide Removal (CDR) approaches - (RIA), *expected EU contribution per project around 7 million Euro, for 3 projects*
- HORIZON-CL5-2022-D1-01-02-two-stage: Socio-economic risks of climate change in Europe - (RIA), *expected EU contribution per project around 5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D1-01-03-two-stage: Social science for land-use strategies in the context of climate change and biodiversity challenges - (RIA), *expected EU contribution per project 6 to 7 million Euro, for 3 projects*

Call - Climate sciences and responses (HORIZON-CL5-2022-D1-02) Deadline: 10.2.2022

- HORIZON-CL5-2022-D1-02-01: Verification and reconciliation of estimates of climate forcers - (RIA), *expected EU contribution per project around 5 million Euro, for 3 projects*
- HORIZON-CL5-2022-D1-02-02: Development of high-resolution Earth system models for global and regional climate change projections - (RIA), *expected EU contribution per project around 10 million Euro, for 2 projects*
- HORIZON-CL5-2022-D1-02-03: Improvement of Integrated Assessment Models in support of climate policies - (RIA), *expected EU contribution per project around 5 million Euro, for 3 projects*

- HORIZON-CL5-2022-D1-02-04: Supporting the formulation of adaptation strategies through improved climate predictions in Europe and beyond - (RIA), expected EU contribution per project around 10 million Euro, for 2 projects
- HORIZON-CL5-2022-D1-02-05: Let nature help do the job: Rewilding landscapes for carbon sequestration, climate adaptation and biodiversity support - (RIA), expected EU contribution per project 8 to 9 million Euro, for 2 projects

DESTINATION 2 – CROSS-SECTORAL SOLUTIONS FOR THE CLIMATE TRANSITION

Call - Cross-sectoral solutions for the climate transition (HORIZON-CL5-2021-D2-01) Deadline: 19.10.2021

A competitive and sustainable European battery value chain

- HORIZON-CL5-2021-D2-01-01: Sustainable processing, refining and recycling of raw materials (Batteries Partnership) - (RIA), expected EU contribution per project 6 to 7 million Euro, for 3 projects
- HORIZON-CL5-2021-D2-01-02: Advanced high-performance Generation 3b (high capacity / high voltage) Li-ion batteries supporting electro mobility and other applications (Batteries Partnership) - (RIA), expected EU contribution per project 6 to 8 million Euro, for 3 projects
- HORIZON-CL5-2021-D2-01-03: Advanced high-performance Generation 4a, 4b (solid-state) Li-ion batteries supporting electro mobility and other applications (Batteries Partnership) - (RIA), expected EU contribution per project 8 to 9 million Euro, for 4 projects
- HORIZON-CL5-2021-D2-01-04: Environmentally sustainable processing techniques applied to large scale electrode and cell component manufacturing for Li ion batteries (Batteries Partnership) - (RIA), expected EU contribution per project around 5 million Euro, for 4 projects
- HORIZON-CL5-2021-D2-01-05: Manufacturing technology development for solid-state batteries (SSB, Generations 4a - 4b batteries) (Batteries Partnership) - (RIA), expected EU contribution per project 6 to 7 million Euro, for 3 projects
- HORIZON-CL5-2021-D2-01-06: Sustainable, safe and efficient recycling processes (Batteries Partnership) - (RIA), expected EU contribution per project 9 to 10 million Euro, for 3 projects
- HORIZON-CL5-2021-D2-01-07: Support for establishment of R&I ecosystem, developing strategic forward-looking orientations to ensure future skills development, knowledge and technological leadership for accelerated disruptive technology exploration and uptake (Batteries Partnership) - (CSA), expected EU contribution per project around 3 million Euro, for 1 project

Emerging breakthrough technologies and climate solutions

- HORIZON-CL5-2021-D2-01-08: Emerging technologies for a climate neutral Europe - (RIA), expected EU contribution per project around 2,5 million Euro, for 8 projects
- HORIZON-CL5-2021-D2-01-09: Methane cracking to usable hydrogen and carbon - (RIA), expected EU contribution per project 2 to 3 million Euro, for 2 projects
- HORIZON-CL5-2021-D2-01-10: Technologies for non- CO2 greenhouse gases removal - (RIA), expected EU contribution per project 2 to 3 million Euro, for 2 projects
- HORIZON-CL5-2021-D2-01-11: Direct atmospheric carbon capture and conversion - (RIA), expected EU contribution per project 2 to 3 million Euro, for 2 projects- (RIA), expected EU contribution per project 2 to 3 million Euro, for 2 projects

Citizens and stakeholder engagement

- HORIZON-CL5-2021-D2-01-12: Fostering a just transition in Europe - (RIA), expected EU contribution per project 3 to 4 million Euro, for 3 projects

- HORIZON-CL5-2021-D2-01-13: Strengthening Social Sciences and Humanities (SSH) research communities in climate, energy and mobility disciplines - (CSA), *expected EU contribution per project 2 to 3 million Euro, for 1 project*
- HORIZON-CL5-2021-D2-01-14: Accelerating the climate transition in difficult contexts: transition super-labs (pilot) - (CSA), *expected EU contribution per project 2 to 3 million Euro, for 1 project*
- HORIZON-CL5-2021-D2-01-15: Fostering cooperation between Horizon Europe cluster 5 National Contact Points (NCPs) - (CSA), *expected EU contribution per project around 3,5 million Euro, for 1 project*

Communities and cities

- HORIZON-CL5-2021-D2-01-16: Co-Funded Partnership: Driving Urban Transitions to a sustainable future (DUT) - (COFUND), *expected EU contribution per project around 37 million Euro, for 1 project*

Call - Cross-sectoral solutions for the climate transition (HORIZON-CL5-2022-D2-01) Deadline: 6.9.2022

A competitive and sustainable European battery value chain

- HORIZON-CL5-2022-D2-01-01: Sustainable processing and refining of battery grade graphite (Batteries Partnership) - (IA), *expected EU contribution per project around 5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D2-01-02: Interface and electron monitoring for the engineering of new and emerging battery technologies (Batteries Partnership) - (RIA), *expected EU contribution per project around 5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D2-01-03: Furthering the development of a materials acceleration platform for sustainable batteries (combining AI, big data, autonomous synthesis robotics, high throughput testing) (Batteries Partnership) - (RIA), *expected EU contribution per project around 20 million Euro, for 1 project*
- HORIZON-CL5-2022-D2-01-04: Towards creating an integrated manufacturing value chain in Europe: from machinery development to plant and site integrated design (Batteries Partnership) - (IA), *expected EU contribution per project 7 to 8 million Euro, for 2 projects*
- HORIZON-CL5-2022-D2-01-05: Next generation technologies for High-performance and safe-by-design battery systems for transport and mobile applications (Batteries Partnership) - (RIA), *expected EU contribution per project around 5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D2-01-06: Embedding smart functionalities into battery cells (embedding sensing and self-healing functionalities to monitor and self-repair battery cells) (Batteries Partnership) - (RIA), *expected EU contribution per project around 5 million Euro, for 3 projects*
- HORIZON-CL5-2022-D2-01-07: Digitalisation of battery testing, from cell to system level, including lifetime assessment (Batteries Partnership) - (RIA), *expected EU contribution per project around 5 million Euro, for 3 projects*
- HORIZON-CL5-2022-D2-01-08: Coordination of large-scale initiative on future battery technologies (Batteries Partnership) - (CSA), *expected EU contribution per project around 3 million Euro, for 1 project*
- HORIZON-CL5-2022-D2-01-09: Physics and data-based battery management for optimised battery utilisation (Batteries Partnership) - (RIA), *expected EU contribution per project around 5 million Euro, for 3 projects*
- HORIZON-CL5-2022-D2-01-10: Streamlined collection and reversed logistics, fully automated, safe and cost-efficient sorting, dismantling and second use before recycling (Batteries Partnership) - (RIA), *expected EU contribution per project around 5 million Euro, for 3 projects*

Communities and cities

- HORIZON-CL5-2022-D2-01-11: CIVITAS 2030 – Coordination and support for EU funded urban mobility innovation - (CSA), *expected EU contribution per project 4 to 5 million Euro, for 1 project*

DESTINATION 3 – SUSTAINABLE, SECURE AND COMPETITIVE ENERGY SUPPLY

Call - Sustainable, secure and competitive energy supply (HORIZON-CL5-2021-D3-01) Deadline: 19.10.2021

Energy systems, grids and storage

- HORIZON-CL5-2021-D3-01-01: Establish the grounds for a common European energy data space - (IA), *expected EU contribution per project around 8 million Euro, for 4 projects*
- HORIZON-CL5-2021-D3-01-02: Laying down the basis for the demonstration of a Real Time Demonstrator of Multi-Vendor Multi-Terminal HVDC with Grid Forming Capability: Coordinated action - (CSA), *expected EU contribution per project around 1 million Euro, for 1 project*
- HORIZON-CL5-2021-D3-01-03: Interoperability community - (CSA), *expected EU contribution per project around 1million Euro, for 1 project*

Cross-cutting issues

- HORIZON-CL5-2021-D3-01-04: Clean Energy Transition - (COFUND), *expected EU contribution per project 70 million Euro, for 1 project*

Call - Sustainable, secure and competitive energy supply (HORIZON-CL5-2021-D3-02) Deadline: 5.1.2022

Global leadership in renewable energy

- HORIZON-CL5-2021-D3-02-01: Demonstration of wave energy devices to increase experience in real sea condition - (IA), *expected EU contribution per project around 15 million Euro, for 1 project*
- HORIZON-CL5-2021-D3-02-02: Sustainability and educational aspects for renewable energy and renewable fuel technologies - (CSA), *expected EU contribution per project around 2,5 million Euro, for 4 projects*
- HORIZON-CL5-2021-D3-02-03: Market Uptake Measures of renewable energy systems - (CSA), *expected EU contribution per project around 2 million Euro, for 5 projects*
- HORIZON-CL5-2021-D3-02-04: Novel tandem, high efficiency Photovoltaic technologies targeting low cost production with earth abundant materials - (RIA), *expected EU contribution per project around 5 million Euro, for 4 projects*

Energy systems, grids and storage

- HORIZON-CL5-2021-D3-02-05: Energy Sector Integration: Integrating and combining energy systems to a cost-optimised and flexible energy system of systems - (IA), *expected EU contribution per project 9 to 10 million Euro, for 3 projects*
- HORIZON-CL5-2021-D3-02-06: Increasing energy system flexibility based on sector-integration services to consumers (that benefits system management by DSOs and TSOs) - (IA), *expected EU contribution per project around 8 million Euro, for 3 projects*
- HORIZON-CL5-2021-D3-02-07: Reliability and resilience of the grid: Measures for vulnerabilities, failures, risks and privacy - (IA), *expected EU contribution per project 7 to 8 million Euro, for 2 projects*
- HORIZON-CL5-2021-D3-02-08: Electricity system reliability and resilience by design: High-Voltage, Direct Current (HVDC)-based systems and solutions - (IA), *expected EU contribution per project 7 to 8 million Euro, for 2 projects*
- HORIZON-CL5-2021-D3-02-09: Demonstration of superconducting systems and elpipes - (IA), *expected EU contribution per project around 15 million Euro, for 1 project*
- HORIZON-CL5-2021-D3-02-10: Demonstration of advanced Power Electronics for application in the energy sector - (IA), *expected EU contribution per project around 5 million Euro, for 2 projects*
- HORIZON-CL5-2021-D3-02-11: Reinforcing digitalisation related know how of local energy ecosystems - (CSA), *expected EU contribution per project around 4 million Euro, for 1 project*

Carbon capture, utilisation and storage (CCUS)

- HORIZON-CL5-2021-D3-02-12: Integration of CCUS in hubs and clusters, including knowledge sharing activities - (CSA), *expected EU contribution per project around 2 million Euro, for 1 project*
- HORIZON-CL5-2021-D3-02-13: Cost reduction of CO₂ capture (new or improved technologies) - (RIA), *expected EU contribution per project 10 to 15 million Euro, for 2 projects*

Cross-cutting issues

- HORIZON-CL5-2021-D3-02-14: Support to the activities of the European Geological Services - (CSA), *expected EU contribution per project around 20 million Euro, for 1 project*
- HORIZON-CL5-2021-D3-02-15: Support to the activities of the ETIPs and technology areas of the SET Plan - (CSA), *expected EU contribution per project around 1 million Euro, for 10 projects*

Call - Sustainable, secure and competitive energy supply (HORIZON-CL5-2021-D3-03) Deadline: 23.2.2022

Global leadership in renewable energy

- HORIZON-CL5-2021-D3-03-01: AU-EU Water Energy Food Nexus - (RIA), *expected EU contribution per project around 2,5 million Euro, for 2 projects*
- HORIZON-CL5-2021-D3-03-02: Next generation of renewable energy technologies - (RIA), *expected EU contribution per project around 3 million Euro, for 11 projects*
- HORIZON-CL5-2021-D3-03-03: Hybrid catalytic conversion of renewable energy to carbon-neutral fuels - (RIA), *expected EU contribution per project around 3,3 million Euro, for 3 projects*
- HORIZON-CL5-2021-D3-03-04: Physics and aerodynamics of atmospheric flow of wind for power production - (RIA), *expected EU contribution per project around 6 million Euro, for 3 projects*
- HORIZON-CL5-2021-D3-03-05: Wind energy in the natural and social environment - (RIA), *expected EU contribution per project around 3 million Euro, for 3 projects*
- HORIZON-CL5-2021-D3-03-06: Novel approaches to concentrated solar power (CSP) - (RIA), *expected EU contribution per project around 3 million Euro, for 3 projects*
- HORIZON-CL5-2021-D3-03-07: Stable high-performance Perovskite Photovoltaics - (RIA), *expected EU contribution per project around 5 million Euro, for 3 projects*
- HORIZON-CL5-2021-D3-03-08: Cost-effective micro-CHP and hybrid heating systems - (RIA), *expected EU contribution per project 3 to 5 million Euro, for 2 projects*
- HORIZON-CL5-2021-D3-03-09: Carbon-negative sustainable biofuel production - (RIA), *expected EU contribution per project around 5 million Euro, for 3 projects*
- HORIZON-CL5-2021-D3-03-10: Innovative foundations, floating substructures and connection systems for floating PV and ocean energy devices - (RIA), *expected EU contribution per project around 3,5 million Euro, for 3 projects*
- HORIZON-CL5-2021-D3-03-11: Development of hydropower equipment for hidden hydropower - (RIA), *expected EU contribution per project 3 to 5 million Euro, for 2 projects*
- HORIZON-CL5-2021-D3-03-12: Innovation on floating wind energy deployment optimized for deep waters and different sea basins (Mediterranean Sea, Black Sea, Baltic Sea, North-east Atlantic Ocean) - (IA), *expected EU contribution per project around 16 million Euro, for 3 projects*
- HORIZON-CL5-2021-D3-03-13: Demonstration pilot lines for alternative and innovative PV technologies (Novel c-Si tandem, thin film tandem, bifacial, CPV, etc.) - (IA), *expected EU contribution per project around 15 million Euro, for 3 projects*
- HORIZON-CL5-2021-D3-03-14: Demonstration of large-scale CHP technologies for a shift to the use of biogenic residues and wastes - (IA), *expected EU contribution per project around 10 million Euro, for 1 project*
- HORIZON-CL5-2021-D3-03-15: Solutions for more sustainable geothermal energy - (RIA), *expected EU contribution per project around 5 million Euro, for 2 projects*

- HORIZON-CL5-2021-D3-03-16: Innovative biomethane production as an energy carrier and a fuel - (IA), expected EU contribution per project around 10 million Euro, for 2 projects

Call - Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-01) Deadline: 26.4.2022

Global leadership in renewable energy

- HORIZON-CL5-2022-D3-01-01: Demonstration of cost-effective advanced biofuel technologies utilizing existing industrial plants - (IA), expected EU contribution per project around 10 million Euro, for 2 projects
- HORIZON-CL5-2022-D3-01-02: Demonstration of innovative materials, supply cycles, recycling technologies to increase the overall circularity of wind energy technology and to reduce the primary use of critical raw materials - (IA), expected EU contribution per project around 13 million Euro, for 3 projects
- HORIZON-CL5-2022-D3-01-03: Advanced manufacturing of Integrated PV - (IA), expected EU contribution per project around 16 million Euro, for 2 projects
- HORIZON-CL5-2022-D3-01-04: Demonstrate the use of high temperature geothermal reservoirs to provide energy storage for the energy system - (IA), expected EU contribution per project around 20 million Euro, for 1 project
- HORIZON-CL5-2022-D3-01-05: Demonstration of innovative plug-and play solutions for system management and renewables storage in off-grid applications - (IA), expected EU contribution per project around 10 million Euro, for 1 project
- HORIZON-CL5-2022-D3-01-06: Novel Agro-Photovoltaic systems - (IA), expected EU contribution per project around 5 million Euro, for 2 projects
- HORIZON-CL5-2022-D3-01-07: Demonstration of innovative rotor, blades and control systems for tidal energy devices - (IA), expected EU contribution per project around 10 million Euro, for 1 project

Energy systems, grids and storage

- HORIZON-CL5-2022-D3-01-08: Supporting the action of consumers in the energy market and guide them to act as prosumers, communities and other active forms of active participation in the energy activities - (IA), expected EU contribution per project 5 to 6 million Euro, for 3 projects
- HORIZON-CL5-2022-D3-01-09: Real Time Demonstrator of Multi-Vendor Multi-Terminal VSC-HVDC with Grid Forming Capability (in support of the offshore strategy) - (IA), expected EU contribution per project around 55 million Euro, for 1 project
- HORIZON-CL5-2022-D3-01-10: Interoperable solutions for flexibility services using distributed energy storage - (IA), expected EU contribution per project 2 to 3 million Euro, for 3 projects
- HORIZON-CL5-2022-D3-01-11: Demonstration of innovative forms of storage and their successful operation and integration into innovative energy systems and grid architectures - (IA), expected EU contribution per project 7 to 8 million Euro, for 4 projects
- HORIZON-CL5-2022-D3-01-12: Replicable solutions for a cross sector compliant energy ecosystem - (IA), expected EU contribution per project 8 to 9 million Euro, for 4 projects
- HORIZON-CL5-2022-D3-01-13: Energy system modelling, optimisation and planning tools - (RIA), expected EU contribution per project around 6 million Euro, for 1 project
- HORIZON-CL5-2022-D3-01-14: Thermal energy storage solutions - (IA), expected EU contribution per project 7 to 8 million Euro, for 4 projects

Carbon capture, utilisation and storage (CCUS)

- HORIZON-CL5-2022-D3-01-15: Decarbonising industry with CCUS - (IA), expected EU contribution per project around 29 million Euro, for 2 projects

Call - Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-02) Deadline: 27.10.2022

Global leadership in renewable energy

- HORIZON-CL5-2022-D3-02-01: Digital solutions for defining synergies in international renewable energy value chains - (RIA), *expected EU contribution per project around 3 million Euro, for 3 projects*
- HORIZON-CL5-2022-D3-02-02: AU-EU Energy System Modelling - (RIA), *expected EU contribution per project around 2,5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D3-02-03: Innovative renewable energy carrier production for heating from renewable energies - (IA), *expected EU contribution per project around 10 million Euro, for 1 project*
- HORIZON-CL5-2022-D3-02-04: Technological interfaces between solar fuel technologies and other renewables - (RIA), *expected EU contribution per project 3 to 5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D3-02-05: Renewable energy carriers from variable renewable electricity surplus and carbon emissions from energy consuming sectors - (IA), *expected EU contribution per project around 10 million Euro, for 2 projects*
- HORIZON-CL5-2022-D3-02-06: Direct renewable energy integration into process energy demands of the chemical industry - (RIA), *expected EU contribution per project 3 to 5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D3-02-07: Renewable energy incorporation in agriculture and forestry - (IA), *expected EU contribution per project around 7,5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D3-02-08: Demonstration of complete value chains for advanced biofuel and non-biological renewable fuel production - (IA), *expected EU contribution per project around 10 million Euro, for 2 projects*

Call - Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-03) Deadline: 10.1.2023

Global leadership in renewable energy

- HORIZON-CL5-2022-D3-03-01: Innovative components and/or sub-systems for CSP plants and/or concentrating solar thermal installations - (IA), *expected EU contribution per project around 5,5 million Euro, for 3 projects*
- HORIZON-CL5-2022-D3-03-02: Best international practice for scaling up sustainable biofuels - (RIA), *expected EU contribution per project around 3 million Euro, for 3 projects*
- HORIZON-CL5-2022-D3-03-03: Efficient and circular artificial photosynthesis - (RIA), *expected EU contribution per project 3 to 5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D3-03-04: Integrated wind farm control - (RIA), *expected EU contribution per project around 6 million Euro, for 3 projects*
- HORIZON-CL5-2022-D3-03-05: Novel Thin Film (TF) technologies targeting high efficiencies - (RIA), *expected EU contribution per project around 5 million Euro, for 4 projects*
- HORIZON-CL5-2022-D3-03-06: Efficient and low-emission technologies for industrial use of combustion and gasification systems from low-value biogenic residues and wastes - (RIA), *expected EU contribution per project 3 to 5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D3-03-07: Development of algal and renewable fuels of non-biological origin - (RIA), *expected EU contribution per project around 5 million Euro, for 3 projects*
- HORIZON-CL5-2022-D3-03-08: Development of digital solutions for existing hydropower operation and maintenance - (RIA), *expected EU contribution per project 3 to 4,5million Euro, for 3 projects*
- HORIZON-CL5-2022-D3-03-09: Recycling end of life PV modules - (IA), *expected EU contribution per project 6 to 7 million Euro, for 3 projects*

DESTINATION 4 – EFFICIENT, SUSTAINABLE AND INCLUSIVE ENERGY USE

Call - Efficient, sustainable and inclusive energy use (HORIZON-CL5-2021-D4-01) Deadline: 19.10.2021

Highly energy-efficient and climate neutral EU building stock

- HORIZON-CL5-2021-D4-01-01: Advanced energy performance assessment and certification - (IA), *expected EU contribution per project 3 to 5 million Euro, for 2 projects*
- HORIZON-CL5-2021-D4-01-02: Industrialisation of deep renovation workflows for energy-efficient buildings - (IA), *expected EU contribution per project 5 to 8 million Euro, for 2 projects*
- HORIZON-CL5-2021-D4-01-03: Advanced data-driven monitoring of building stock energy performance - (IA), *expected EU contribution per project 3 to 5 million Euro, for 2 projects*

Industrial facilities in the energy transition

- HORIZON-CL5-2021-D4-01-04: Full-scale demonstration of heat upgrade technologies with supply temperature in the range 90 - 160°C - (IA), *expected EU contribution per project around 8 million Euro, for 2 projects*
- HORIZON-CL5-2021-D4-01-05: Industrial excess (waste) Heat-to-Power conversion based on organic Rankine cycles - (IA), *expected EU contribution per project 10 to 14 million Euro, for 1 project*

Call - Efficient, sustainable and inclusive energy use (HORIZON-CL5-2021-D4-02) Deadline: 25.1.2022

Highly energy-efficient and climate neutral EU building stock

- HORIZON-CL5-2021-D4-02-01: Demonstrating integrated technology solutions for buildings with performance guarantees (Built4People) - (IA), *expected EU contribution per project 5 to 7,5 million Euro, for 2 projects*
- HORIZON-CL5-2021-D4-02-02: Cost-effective, sustainable multi-functional and/or prefabricated holistic renovation packages, integrating RES and including re-used and recycled materials (Built4People) - (IA), *expected EU contribution per project 9 to 11 million Euro, for 2 projects*
- HORIZON-CL5-2021-D4-02-03: Strengthening European coordination and exchange for innovation uptake towards sustainability, quality, circularity and social inclusion in the built environment as a contribution to the new European Bauhaus (Built4People) - (CSA), *expected EU contribution per project around 1 million Euro, for 1 project*

Call - Efficient, sustainable and inclusive energy use (HORIZON-CL5-2022-D4-01) Deadline: 6.9.2022

Highly energy-efficient and climate neutral EU building stock

- HORIZON-CL5-2022-D4-01-01: Demand response in energy-efficient residential buildings - (IA), *expected EU contribution per project 4 to 6 million Euro, for 2 projects*
- HORIZON-CL5-2022-D4-01-02: Renewable-intensive, energy positive homes - (IA), *expected EU contribution per project 4 to 6 million Euro, for 2 projects*
- HORIZON-CL5-2022-D4-01-03: Smarter buildings for better energy performance - (IA), *expected EU contribution per project 4 to 6 million Euro, for 2 projects*

Industrial facilities in the energy transition

- HORIZON-CL5-2022-D4-01-04: Development and pilot demonstration of heat upgrade technologies with supply temperature in the range 150-250°C - (RIA), *expected EU contribution per project 3 to 5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D4-01-05: Development of high temperature thermal storage for industrial applications - (RIA), *expected EU contribution per project 3 to 4 million Euro, for 2 projects*

Call - Efficient, sustainable and inclusive energy use (HORIZON-CL5-2022-D4-02) Deadline: 24.1.2023

Highly energy-efficient and climate neutral EU building stock

- HORIZON-CL5-2022-D4-02-01: Designs, materials and solutions to improve resilience, preparedness & responsiveness of the built environment for climate adaptation (Built4People) - (IA), *expected EU contribution per project 5 to 7,5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D4-02-02: Solutions for the sustainable, resilient, inclusive and accessible regeneration of neighbourhoods enabling low carbon footprint lifestyles and businesses (Built4People) - (IA), *expected EU contribution per project 5 to 7,5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D4-02-03: Sustainable and resource-efficient solutions for an open, accessible, inclusive, resilient and low-emission cultural heritage: prevention, monitoring, management, maintenance, and renovation (Built4People) - (RIA), *expected EU contribution per project 4 to 5 million Euro, for 4 projects*
- HORIZON-CL5-2022-D4-02-04: Smart-grid ready and smart-network ready buildings, acting as active utility nodes (Built4People) - (IA), *expected EU contribution per project 6 to 9 million Euro, for 2 projects*
- HORIZON-CL5-2022-D4-02-05: More sustainable buildings with reduced embodied energy / carbon, high life-cycle performance and reduced life-cycle costs (Built4People) - (IA), *expected EU contribution per project 6 to 9,5 million Euro, for 2 projects*

DESTINATION 5 – CLEAN AND COMPETITIVE SOLUTIONS FOR ALL TRANSPORT MODES

Call - Clean and competitive solutions for all transport modes (HORIZON-CL5-2021-D5-01) Deadline: 14.9.2021

Zero-emission road transport

- HORIZON-CL5-2021-D5-01-01: Nextgen vehicles: Innovative zero emission BEV architectures for regional medium freight haulage (2ZERO) - (IA), *expected EU contribution per project 10 to 15 million Euro, for 3 projects*
- HORIZON-CL5-2021-D5-01-02: Nextgen EV components: Integration of advanced power electronics and associated controls (2ZERO) - (RIA), *expected EU contribution per project 4 to 6 million Euro, for 4 projects*
- HORIZON-CL5-2021-D5-01-03: System approach to achieve optimised Smart EV Charging and V2G flexibility in mass-deployment conditions (2ZERO) - (RIA), *expected EU contribution per project 7 to 10 million Euro, for 3 projects*
- HORIZON-CL5-2021-D5-01-04: LCA and design for sustainable circularity - holistic approach for zero-emission mobility solutions and related battery value chain (2ZERO & Batteries Partnership) - (CSA), *expected EU contribution per project around 4 million Euro, for 1 project*

Aviation

- HORIZON-CL5-2021-D5-01-05: Greenhouse gas aviation emissions reduction technologies towards climate neutrality by 2050 - (RIA), *expected EU contribution per project 2 to 6 million Euro, for 6 projects*
- HORIZON-CL5-2021-D5-01-06: Next generation digital aircraft transformation in design, manufacturing, integration and maintenance - (RIA), *expected EU contribution per project 3 to 6 million Euro, for 5 projects*

Enabling climate neutral, clean, smart, and competitive waterborne transport

- HORIZON-CL5-2021-D5-01-07: Enabling the safe and efficient on-board storage and integration within ships of large quantities of ammonia and hydrogen fuels (ZEWTP Partnership) - (IA), *expected EU contribution per project around 10 million Euro, for 2 projects*

- HORIZON-CL5-2021-D5-01-08: Enabling the full integration of very high power fuel cells in ship design using co-generation and combined cycle solutions for increased efficiency with multiple fuels (ZEWT Partnership) - (RIA), *expected EU contribution per project around 15 million Euro, for 1 project*
- HORIZON-CL5-2021-D5-01-09: CSA identifying waterborne sustainable fuel deployment scenarios (ZEWT Partnership) - (CSA), *expected EU contribution per project around 0,5 million Euro, for 1 project*
- HORIZON-CL5-2021-D5-01-10: Innovative on-board energy saving solutions (ZEWT Partnership) - (RIA), *expected EU contribution per project around 5 million Euro, for 4 projects*
- HORIZON-CL5-2021-D5-01-11: Hyper powered vessel battery charging system (ZEWT Partnership) - (IA), *expected EU contribution per project around 7 million Euro, for 2 projects*
- HORIZON-CL5-2021-D5-01-12: Assessing and preventing methane slip from LNG engines in all conditions within both existing and new vessels (ZEWT Partnership) - (IA), *expected EU contribution per project around 7 million Euro, for 1 project*
- HORIZON-CL5-2021-D5-01-13: Digital Twin models to enable green ship operations (ZEWT Partnership) - (RIA), *expected EU contribution per project around 7 million Euro, for 1 project*
- HORIZON-CL5-2021-D5-01-14: Proving the feasibility of a large clean ammonia marine engine (ZEWT Partnership) - (IA), *expected EU contribution per project around 10 million Euro, for 1 project*

Impact of transport on environment and human health

- HORIZON-CL5-2021-D5-01-15: Development and demonstration of cost affordable and adaptable retrofit solutions for tailpipe and brake polluting emissions - (IA), *expected EU contribution per project 4 to 5 million Euro, for 2 projects*
- HORIZON-CL5-2021-D5-01-16: Assessment of noise and particle emissions of L category vehicles from real driving conditions - (RIA), *expected EU contribution per project 4 to 5 million Euro, for 1 project*

Cross-cutting actions

- HORIZON-CL5-2021-D5-01-17: Support for dissemination events in the field of Transport Research - (CSA), *expected EU contribution per project around 1,5 million Euro, for 1 project*

Call - Clean and competitive solutions for all transport modes (HORIZON-CL5-2022-D5-01) Deadline: 26.4.2022

Enabling climate neutral, clean, smart, and competitive waterborne transport

- HORIZON-CL5-2022-D5-01-01: Exploiting electrical energy storage systems and better optimising large battery electric power within fully battery electric and hybrid ships (ZEWT Partnership) - (IA), *expected EU contribution per project around 8 million Euro, for 2 projects*
- HORIZON-CL5-2022-D5-01-02: Innovative energy storage systems on-board vessels (ZEWT Partnership) - (RIA), *expected EU contribution per project around 5 million Euro, for 3 projects*
- HORIZON-CL5-2022-D5-01-03: Exploiting renewable energy for shipping, in particular focusing on the potential of wind energy (ZEWT Partnership) - (RIA), *expected EU contribution per project around 9 million Euro, for 2 projects*
- HORIZON-CL5-2022-D5-01-04: Transformation of the existing fleet towards greener operations through retrofitting (ZEWT Partnership) - (IA), *expected EU contribution per project around 5 million Euro, for 5 projects*
- HORIZON-CL5-2022-D5-01-05: Seamless safe logistics through an autonomous waterborne freight feeder loop service - (RIA), *expected EU contribution per project around 15 million Euro, for 1 project*
- HORIZON-CL5-2022-D5-01-06: Computational tools for shipbuilding - (IA), *expected EU contribution per project around 7 million Euro, for 3 projects*

Impact of transport on environment and human health

- HORIZON-CL5-2022-D5-01-07: Prevent smog episodes in Europe: Air quality impact of engine-emitted volatile, semi volatile and secondary particles - (RIA), *expected EU contribution per project 2,5 to 3 million Euro, for 3 projects*

Zero-emission road transport

- HORIZON-CL5-2022-D5-01-08: Modular multi-powertrain zero-emission systems for HDV (BEV and FCEV) for efficient and economic operation (2ZERO) - (IA), *expected EU contribution per project 15 to 20 million Euro, for 3 projects*
- HORIZON-CL5-2022-D5-01-09: Nextgen EV components: High efficiency and low cost electric motors for circularity and low use of rare resources (2ZERO) - (RIA), *expected EU contribution per project 3 to 6 million Euro, for 4 projects*
- HORIZON-CL5-2022-D5-01-10: New generation of full electric urban and peri-urban Bus Rapid Transit systems to strengthen climate-friendly mass transport (2ZERO) - (IA), *expected EU contribution per project 20 to 25 million Euro, for 1 project*
- HORIZON-CL5-2022-D5-01-11: Stimulating Road Transport research and innovation dissemination and implementation in Europe and around the World - (CSA), *expected EU contribution per project around 2 million Euro, for 1 project*

Aviation

- HORIZON-CL5-2022-D5-01-12: Towards a silent and ultra-low local air pollution aircraft - (RIA), *expected EU contribution per project 2 to 5 million Euro, for 5 projects*
- HORIZON-CL5-2022-D5-01-13: Digital aviation technologies for new aviation business models, services, emerging global threats and industrial competitiveness - (RIA), *expected EU contribution per project 2 to 5 million Euro, for 5 projects*
- HORIZON-CL5-2022-D5-01-14: European Aviation Research Policy in support to EU policies and initiatives - (RIA), *expected EU contribution per project 0,5 to 2,5 million Euro, for 3 projects*

DESTINATION 6 – SAFE, RESILIENT TRANSPORT AND SMART MOBILITY SERVICES FOR PASSENGERS AND GOODS

Call - Safe, Resilient Transport and Smart Mobility services for passengers and goods (HORIZON-CL5-2021-D6-01) Deadline: 19.10.2021

Connected, Cooperative and Automated Mobility (CCAM)

- HORIZON-CL5-2021-D6-01-01: More powerful and reliable on-board perception and decision-making technologies addressing complex environmental conditions (CCAM Partnership) - (IA), *expected EU contribution per project 6 to 8 million Euro, for 2 projects*
- HORIZON-CL5-2021-D6-01-02: Common approaches for the safety validation of CCAM systems (CCAM Partnership) - (RIA), *expected EU contribution per project 12 to 15 million Euro, for 1 project*
- HORIZON-CL5-2021-D6-01-03: Physical and Digital Infrastructure (PDI), connectivity and cooperation enabling and supporting CCAM (CCAM Partnership) - (IA), *expected EU contribution per project 7 to 9 million Euro, for 2 projects*
- HORIZON-CL5-2021-D6-01-04: Cyber secure and resilient CCAM (CCAM Partnership) - (RIA), *expected EU contribution per project 5 to 6 million Euro, for 2 projects*
- HORIZON-CL5-2021-D6-01-05: Analysis of socio-economic and environmental impacts and assessment of societal, citizen and user aspects for needs based CCAM solutions (CCAM Partnership) - (RIA), *expected EU contribution per project 3 to 4 million Euro, for 2 projects*
- HORIZON-CL5-2021-D6-01-06: Framework for better coordination of large-scale demonstration pilots in Europe and EU-wide knowledge base (CCAM Partnership) - (RIA), *expected EU contribution per project 5 to 6 million Euro, for 1 project*

Multimodal and sustainable transport systems for passengers and goods

- HORIZON-CL5-2021-D6-01-07: More efficient and effective multimodal freight transport nodes to increase flexibility, service visibility and reduce the average cost of freight transport - (IA), expected EU contribution per project 7 to 8 million Euro, for 2 projects
- HORIZON-CL5-2021-D6-01-08: New delivery methods and business/operating models to green the last mile and optimise road transport - (IA), expected EU contribution per project 7 to 8 million Euro, for 2 projects
- HORIZON-CL5-2021-D6-01-09: Climate resilient and environmentally sustainable transport infrastructure, with a focus on inland waterways - (CSA), expected EU contribution per project around 7,5 million Euro, for 3 projects

Safety and resilience - per mode and across all transport modes

- HORIZON-CL5-2021-D6-01-10: Testing safe lightweight vehicles and improved safe human-technology interaction in the future traffic system - (RIA), expected EU contribution per project 3,5 to 4 million Euro, for 3 projects
- HORIZON-CL5-2021-D6-01-11: Radical improvement of road safety in low and medium income countries in Africa - (CSA), expected EU contribution per project around 4 million Euro, for 2 projects
- HORIZON-CL5-2021-D6-01-12: Controlling infection on large passenger ships - (RIA), expected EU contribution per project 3 to 5 million Euro, for 2 projects
- HORIZON-CL5-2021-D6-01-13: Safe automation and human factors in aviation – intelligent integration and assistance - (IA), expected EU contribution per project 4 to 8 million Euro, for 2 projects

Call - Safe, Resilient Transport and Smart Mobility services for passengers and goods (HORIZON-CL5-2022-D6-01) Deadline: 12.1.2022

Connected, Cooperative and Automated Mobility (CCAM)

- HORIZON-CL5-2022-D6-01-01: European demonstrators for integrated shared automated mobility solutions for people and goods (CCAM Partnership) - (IA), expected EU contribution per project 20 to 25 million Euro, for 2 projects
- HORIZON-CL5-2022-D6-01-02: Reliable occupant protection technologies and HMI solutions to ensure the safety of highly automated vehicles (CCAM Partnership) - (RIA), expected EU contribution per project 6 to 8 million Euro, for 1 project
- HORIZON-CL5-2022-D6-01-03: Human behavioural model to assess the performance of CCAM solutions compared to human driven vehicles (CCAM Partnership) - (RIA), expected EU contribution per project 7 to 8 million Euro, for 3 projects
- HORIZON-CL5-2022-D6-01-04: Integrate CCAM services in fleet and traffic management systems (CCAM Partnership) - (IA), expected EU contribution per project 4 to 5 million Euro, for 2 projects
- HORIZON-CL5-2022-D6-01-05: Artificial Intelligence (AI): Explainable and trustworthy concepts, techniques and models for CCAM (CCAM Partnership) - (RIA), expected EU contribution per project 5 to 6 million Euro, for 2 projects

Safety and resilience - per mode and across all transport modes

- HORIZON-CL5-2022-D6-01-06: Predictive safety assessment framework and safer urban environment for vulnerable road users - (RIA), expected EU contribution per project 4 to 4,33 million Euro, for 3 projects
- HORIZON-CL5-2022-D6-01-07: More resilient aircraft and increased survivability- (IA), expected EU contribution per project 4 to 8 million Euro, for 1 project
- HORIZON-CL5-2022-D6-01-08: Safer navigation and tackling containership fires- (IA), expected EU contribution per project 3,5 to 6 million Euro, for 2 projects

Call - Safe, Resilient Transport and Smart Mobility services for passengers and goods (HORIZON-CL5-2022-D6-02) Deadline: 6.9.2022

Multimodal and sustainable transport systems for passengers and goods

- HORIZON-CL5-2022-D6-02-01: Logistics networks integration and harmonisation through operational connectivity to optimise freight flows and drive logistics to climate neutrality - (IA), *expected EU contribution per project 7 to 8 million Euro, for 2 projects*
- HORIZON-CL5-2022-D6-02-02: Urban logistics and planning: anticipating urban freight generation and demand including digitalisation of urban freight - (IA), *expected EU contribution per project 7 to 8 million Euro, for 2 projects*
- HORIZON-CL5-2022-D6-02-03: Smart enforcement for resilient, sustainable and more efficient transport operations - (RIA), *expected EU contribution per project around 4 million Euro, for 2 projects*
- HORIZON-CL5-2022-D6-02-04: Accelerating the deployment of new and shared mobility services for the next decade - (IA), *expected EU contribution per project 8 to 10 million Euro, for 2 projects*
- HORIZON-CL5-2022-D6-02-05: Advanced multimodal network and traffic management for seamless door-to-door mobility of passengers and freight transport - (RIA), *expected EU contribution per project 4 to 5 million Euro, for 3 projects*
- HORIZON-CL5-2022-D6-02-06: Smart and efficient ways to construct, maintain and decommission with zero emissions from transport infrastructure - (IA), *expected EU contribution per project around 5 million Euro, for 2 projects*
- HORIZON-CL5-2022-D6-02-07: New concepts and approaches for resilient and green freight transport and logistics networks against disruptive events (including pandemics) - (RIA), *expected EU contribution per project around 4 million Euro, for 2 projects*

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