Funding opportunities for RHC projects in Croatia
HORIZON EUROPE

CALLS 2022

Opportunities for RHC
Call

Model: single-stage

Deadline date: 06 September 2022 17:00:00 Brussels time

Budget: € 12 million, The Commission estimates that an EU contribution of between EUR 4.00 and 6.00 million would allow these outcomes to be addressed appropriately.

Expected Outcome:

• Increased potential benefits, trust and acceptability of demand-response solutions for residential consumers.
• Advanced asset control and aggregation approaches that enable the participation of residential buildings in commercial demand response.
• Expanded pool of assets relevant for demand response in the residential sector.

Scope: Address the large but untapped potential of the residential sector for Demand Response with a view to support the energy transition at system level while respecting user privacy, comfort and ownership.
Proposals should:

• Investigate innovative demand response solutions for the residential sector, including new control modes and asset optimisation techniques involving as many devices as possible.

• Ensure that the proposed solutions comply with the principle of privacy by design and with best practices on data protection.

• Ensure that the proposed solutions allow to minimise the effort required to elicit user preferences, also investigating innovative approaches for user segmentation and engagement.

• Take due account the regulatory frameworks of the regions / countries in which the proposed solutions could be deployed in designing their innovation, and shaping related exploitation activities.

• Seek to the best consideration of social and economic enablers in the design of the innovative solutions.

• Consider social innovations, notably as new tools, ideas and methods leading to active citizen engagement and as drivers of social change, social ownership, and new social practices.

• Demonstrate that the proposed solutions lead to reducing costs of small demand response assets e.g. through improved models and faster data processing and, are scalable and replicable.

• Demonstrate that the proposed solutions are suitable for explicit demand response, or a combination of both explicit and implicit residential demand response.

• Each project is expected to include at least three demonstration sites located in different climatic regions.

• Activities are expected to achieve TRL 6-7 by the end of the project – see General Annex B.
Renewable-intensive, energy positive homes
TOPIC ID: HORIZON-CL5-2022-D4-01-02

Call

Model: single-stage

Deadline date: 06 September 2022 17:00:00 Brussels time

Budget: € 12 million, The Commission estimates that an EU contribution of between EUR 4.00 and 6.00 million would allow these outcomes to be addressed appropriately.

Expected Outcome:

• Project results are expected to contribute to all of the following expected outcomes:

• Faster transition to the next generation of new constructions and renovation of cost-effective energy positive, climate neutral residential buildings.

• Streamlined integration of advanced smart technologies, renewable energy and storage solutions in residential construction and renovation projects.

• Faster transition to buildings and technical elements that are capable to adapt to different user profiles and lifestyles, improving air quality, human health and well-being parameters.

• Improved skills and competences among the workforce to support a rapid uptake of energy positive buildings in the residential sector.

• Scope: The aim is to move beyond NZEB (nearly zero-energy buildings) for new constructions and to the extent possible, for renovations, and to streamline energy positive buildings, ensuring buildings can marry high energy performance with maximum flexibility and adaptability to a changing society in a cost-effective manner. This is a key challenge for the residential sector in the transformation to a highly energy-efficient and climate neutral EU building stock, where energy positive homes should become the norm.
Proposals should:

- Investigate and demonstrate approaches for the construction of new energy positive residential buildings (and/or the renovation of existing residential buildings), with a focus on multi-family, multi-storey buildings, encompassing all relevant areas:
  - Design phase (aesthetic and technical solutions and their potential, passive and active strategies, sustainable design);
  - Integrated design and construction concepts;
  - Reconfigurable designs and technical elements capable of adapting to different user profiles and lifestyles;
  - Selection and installation of affordable and high performance construction products and materials, building on previous projects;
  - Innovative processes from manufacturing to construction site;
  - Integration of renewable energy production for heating and cooling, electricity production (e.g. BIPV and BAPV), and where relevant, thermal and electrical storage, including shared at neighbourhood and district levels; for existing buildings, cost-effective, innovative solutions that allow to (at least) fully cover the energy consumption of the building (electricity, heat and cooling) with renewable energy;
  - Advanced use of smart management technologies (for control and operational issues, Building Management Systems (BMS) or Building Automation Systems (BAS)) to improve air quality, human health and well-being parameters, to facilitate engagement and inclusiveness of occupants and support measurement of (as-built) building performance;
  - Reuse and recycling of elements, components and materials, in particular in relation to buildings end of life, also minimizing embodied carbon emissions over the whole life cycle, in particular for smart technologies;
  - Where applicable, the use of grey- and black-waters.
- Ensure that the cost of such buildings/apartments does not increase substantially compared to current local / regional practises.
- Clustering and cooperation with other relevant projects is strongly encouraged; in particular, liaison and synergies with the Horizon Europe Partnership on ‘People-centric sustainable built environment’.
- Each project is expected to include at least three demonstration sites located in different climatic regions.
- The demonstrations are expected to span a continuous interval of at least twelve months and to ensure measurement of (as-built) building performances. The relevant building professionals (e.g. architects, installers, workers, craftsmen, building managers) should be involved.
- Projects are expected to assess the sustainability of the proposed solutions in environmental, social and economic terms, considering among others the embodied carbon emissions from materials. The reuse and recycling of elements, components and materials of the proposed solutions at the end of life should be ensured.
- Specific Topic Conditions: Activities are expected to achieve TRL 6-7 by the end of the project – see General Annex B.
Smarter buildings for better energy performance
TOPIC ID: HORIZON-CL5-2022-D4-01-03

Call
Model: single-stage
Deadline date: 06 September 2022 17:00:00 Brussels time
Budget: € 12 million, The Commission estimates that an EU contribution of between EUR 4.00 and 6.00 million would allow these outcomes to be addressed appropriately.

Expected Outcome:
• More innovative, affordable, user-friendly and accessible products and systems to continuously monitor and improve the energy performance of buildings.
• Increased building energy performance through the optimisation and integration of different technologies, including renewable energy and storage, and services.
• Easier and more systematic use smart products and services to achieve savings where energy renovation is not an option.
• Higher replicability to increase number of buildings with smart building devices and digital infrastructure resulting in a higher smart readiness rating.

Scope: Improvement and cost-reduction of technologies to predict, assess, monitor and control in real time the energy performance of buildings, including energy efficiency, renewables, storage and their optimisation.
The proposal should:

• Develop new or enhance existing solutions for interoperability of systems, including between building automation and control systems (BACS) and other technical building systems and devices (including IoT ones), as well as between buildings and the grid.

• Investigate innovative approaches to ensure high level of security and privacy by design in buildings.

• Investigate approaches to reduce costs of systems allowing the integration of energy efficiency, renewables, storage and their optimisation.

• On the basis of the above, demonstrate the potential for energy savings from energy management solutions based on smart technical building systems (predictive controllers, smart thermostats, active sensors, smart lighting, etc.).

• Assess the contribution of proposed solutions to the enhancement of smart readiness of buildings as rated by the smart readiness indicator under Directive 2010/31/EU.

• Demonstrate that the developed solutions are user-friendly and ensure the desired indoor environment quality and user satisfaction.

• Where possible, demonstrate that such solutions can build flexibly on services/products not originally intended for energy management (e.g. a smart home system).

• Seek to ensure from the design phase that the project is developed with a view to integrate its results/deliverables under a digital building logbook.

• Each project is expected to include at least three demonstration sites located in different climatic regions.

• Clustering and cooperation with other relevant projects is strongly encouraged; in particular, liaison and synergies with the European Partnership on ‘People-centric sustainable built environment’.

• Activities are expected to achieve TRL 8 by the end of the project – see General Annex B.
Development and pilot demonstration of heat upgrade technologies with supply temperature in the range 150-250°C

TOPIC ID: HORIZON-CL5-2022-D4-01-04

Call

Model: single-stage

Deadline date: 06 September 2022 17:00:00 Brussels time

Budget: € 10 million, The Commission estimates that an EU contribution of between EUR 3.00 and 5.00 million would allow these outcomes to be addressed appropriately.

Expected Outcome:

- Project results are expected to contribute to all the following expected outcomes:
- Validate the technical feasibility of industrial heat upgrade systems capable of supplying various industrial processes with useful heat in the (sink) temperature range of 150 – 250 °C from renewable heat sources (e.g. solar thermal), ambient heat or industrial waste heat.
- Development and demonstration at pilot scale (5 – 200 kWth).
- Better awareness of the challenges and benefits of heat upgrade in the relevant industrial sectors.
- Scope: This topic aims to satisfy the need for low-medium temperature heat in the relevant industrial sectors, by upgrading lower temperature heat flows, including from renewable heat sources, ambient heat or industrial excess (waste) heat, as a cost-efficient way to improve energy efficiency and reduce the GHG emissions.
- Available heat upgrade technologies, such as for example heat pumps, are limited to supply (sink) temperatures of 150°C. Innovative heat upgrade technologies have the potential to extend the temperature range up to 250°C, which would allow to cover more industrial applications.
In order to reach this goal all the following development areas need to be covered:

- Identify the target industrial processes which would benefit from this higher temperature heat upgrade technology, as excess (waste) heat sources and as users (heat sinks); make a preliminary assessment of the potential impacts of these industrial applications in terms of energy savings and GHG and air pollutant emissions reductions in the EU (and Associated States, if data are available), so as to maximise the impact and coverage of the most promising applications in the subsequent development step; estimate by extrapolation the benefits at global level. A preliminary analysis of the feasibility and GHG emissions reduction impact, of the proposed heat upgrade process is expected already in the proposal.

- Develop one or more heat upgrade technologies to raise the sink output temperature to the range 150 to 250°C. If needed investigate in new working fluids. Optimise the technical performances in terms of: temperature increase between sink inlet and sink outlet temperatures; temperature spread between source and sink temperatures; flexibility to source input temperature variations; higher sink thermal power potential; higher coefficient of performance.

- Integration and demonstration of at least one system at pilot scale, in conditions, as far as practical, similar to real industrial environment. The optional integration of renewable heat sources (e.g. solar thermal) as the input heat flow to be further upgraded, is in scope.

- Make a preliminary estimation of the future equipment cost for at least two industrial applications, to evaluate its economic potential; define an exploitation strategy.

- Dissemination of the technical and economic benefits, notably (but not only) to the communities of the relevant Horizon Europe private-public partnerships.

- Specific Topic Conditions: Activities are expected to achieve TRL 5 by the end of the project – see General Annex B.
Development of high temperature thermal storage for industrial applications
TOPIC ID: HORIZON-CL5-2022-D4-01-05

Call

Model: single-stage

Deadline date: 06 September 2022 17:00:00 Brussels time

Budget: € 8 million, The Commission estimates that an EU contribution of between EUR 3.00 and 4.00 million would allow these outcomes to be addressed appropriately.

Expected Outcome:

• Short term (intraday or a couple of days) thermal storage systems for decoupling the heat generation from the heat use in industrial processes.

• Development of economically affordable new materials (including better basic understanding) for heat storage dedicated to medium to high temperature industrial processes.

• Better awareness of the challenges and benefits of heat storage in the relevant industrial sectors.
Development of high temperature thermal storage for industrial applications

SCOPE:

This topic aims to satisfy the need for decoupling the heat generation from the heat use in continuous or non-continuous industrial processes, in order to allow for heat exchanges between different industrial processes and so enable industrial symbiosis, or to generate heat during off-peak times and so provide energy demand flexibility.

In order to reach this goal all the following development areas need to be covered:

- Cost effective and new designs for high temperature storage of industrial heat, with minimal footprint. The large capacity storages in combination with long design lifetime, require the development of novel materials and designs.
- Development of materials and components: thermal storage materials, container construction, insulation technology, heat exchangers with aid of computational fluid dynamics.
- Integration and demonstration of the system at lab scale.
- Make a preliminary estimation of the future equipment cost for at least two industrial applications, to evaluate its economic potential.
- Make an analysis of the potential industrial applications and related benefits of the proposed storage system in EU27 and (if data are available) in the Associated States and, by extrapolation, at global level; a preliminary version of this analysis is expected already in the proposal. Define an exploitation strategy.
- Dissemination of the technical and economic benefits, notably (but not only) to the communities of the relevant Horizon Europe private-public partnerships.

SPECIFIC TOPIC CONDITIONS:

Activities are expected to achieve TRL 4-5 by the end of the project – see General Annex B.
Calls on batteries

Embedding smart functionalities into battery cells (embedding sensing and self-healing functionalities to monitor and self-repair battery cells) (Batteries Partnership)
HORIZON-CL5-2022-D2-01-06

Interface and electron monitoring for the engineering of new and emerging battery technologies (Batteries Partnership)
HORIZON-CL5-2022-D2-01-02

Sustainable processing and refining of battery grade graphite (Batteries Partnership)
HORIZON-CL5-2022-D2-01-01

Next generation technologies for High-performance and safe-by-design battery systems for transport and mobile applications (Batteries Partnership)
HORIZON-CL5-2022-D2-01-05

Physics and data-based battery management for optimised battery utilisation (Batteries Partnership)
HORIZON-CL5-2022-D2-01-09

Coordination of large-scale initiative on future battery technologies (Batteries Partnership)
HORIZON-CL5-2022-D2-01-08
CIVITAS 2030 – Coordination and support for EU funded urban mobility innovation
HORIZON-CL5-2022-D2-01-11

Towards creating an integrated manufacturing value chain in Europe: from machinery development to plant and site integrated design (Batteries Partnership)
HORIZON-CL5-2022-D2-01-04

Digitalisation of battery testing, from cell to system level, including lifetime assessment (Batteries Partnership)
HORIZON-CL5-2022-D2-01-07

Streamlined collection and reversed logistics, fully automated, safe and cost-efficient sorting, dismantling and second use before recycling (Batteries Partnership)
HORIZON-CL5-2022-D2-01-10

Furthering the development of a materials acceleration platform for sustainable batteries (combining AI, big data, autonomous synthesis robotics, high throughput testing) (Batteries Partnership)
HORIZON-CL5-2022-D2-01-03
• Status: single-stage

• Open for submission

• Deadline date: 06 September 2022 17:00:00 Brussels time
LIFE calls 2022

• All LIFE Calls for proposals 2022 have been published on the Funding & tender opportunities portal on 17 May 2022.

• LIFE Action Grants for clean energy transition sub-programme: 16 November 2022
LIFA calls 2022

**LIFE-2022-CET-BUILDSKILLS** - BUILD UP Skills – Strategies and training interventions enabling a decarbonised building stock

**LIFE-2022-CET-HOMERENO** - Integrated Home Renovation Services

**LIFE-2022-CET-LOCAL** - Technical support to clean energy transition plans and strategies in municipalities and regions

**LIFE-2022-CET-BUSINESS** - Supporting the clean energy transition of the business sector

**LIFE-2022-CET-INNOFIN** - Innovative financing schemes for sustainable energy investments

**LIFE-2022-CET-BUILDPERFORM** - Energy performance and Smart Readiness of buildings – making the instruments work

**LIFE-2022-CET-FINROUND** - National Finance Roundtables for sustainable energy investments

**LIFE-2022-CET-ENERCOM** - Developing support mechanisms for energy communities

**LIFE-2022-CET-DEEPRENO** - Towards a zero-emission building stock: strengthening the enabling framework for deep renovation

**LIFE-2022-CET-MAINSTREAM** - Mainstreaming sustainable energy investments in the financial sector
LIFE calls 2022

- LIFE-2022-CET-ENERPOV - Addressing building related interventions in vulnerable districts
- LIFE-2022-CET-EE1st - Making the “Energy efficiency first” principle more operational
- LIFE-2022-CET-HEATPUMPS - Accelerating deployment and affordability of heat pumps through collective purchase actions and procurement
- LIFE-2022-CET-PDA - Project Development Assistance for sustainable energy investments
- LIFE-2022-CET-COMPLIANCE - New ecodesign and energy labelling compliance support facility for suppliers and retailers
- LIFE-2022-CET-DH - Integration of low-grade renewable energy or waste heat in high temperature district heating
- LIFE-2022-CET-RENOPUB - Setting up facilitation structures to accelerate the renovation wave in the public sector
- LIFE-2022-CET-POLICY - Towards an effective implementation of key legislation in the field of sustainable energy
EU funding programme for R&I: calls 2021-2022

• Innovation Fund:

- Large scale ie >7,5€mio: 1st call (7 projects awarded/311 applied but 65 eligible at 2nd stage) and 2nd call for large scale with a deadline on 3 March 2022

- Small scale projects: 1st call (32 projects awarded/232 applications), 2nd call in 2022

• > 1 awarded on geothermal for 4,5 €mio: CCGeo: Closed Carbon Geothermal Energy
Innovation Fund's second small-scale call for projects

- Opening date: 31 March 2022
- Deadline model: Single-stage
- Deadline date: 31 August 2022
EEA- Iceland, Liechtenstein, Norway Grants

- Ministry of Regional Development and EU funds of Croatia
- e.g. „Geothermal project- PREP4KaGT-1“