Targeting key value chain components for increasing the competitiveness of renewable energy technologies in Europe

HORIZON-CL5-2026-03-D3-01

Program:	**Horizon Europe Cluster 5.**
Típus:	**Research and Innovation Action**
TRL szint:	**6-7**
Támogatás projektenként:	**9 M EUR**
Támogatott projektek száma:	**3**
Pályázati felület megnyílik:	**2025. december 18.**
Beadási határidő:	**2026. március 31.**

Felhívás linkje:

LINK

Proposals should focus on development of solutions critical for competitiveness in the European context in the long run.

Issues which can be addressed include for example: Material efficiency and circularity, including repair possibilities, lifetime extension and end-of-life management, access to fully sustainable low-cost feedstock, digital and AI tools during capacity build-up and operation, technologies for sustainable and efficient horizontal and vertical value chain optimisation, optimisation of logistics and production pathways, expert knowledge and training (Other relevant issues can equally be addressed).

Proposals should, where applicable also assess the benefit/cost of domestic ownership for given value chain solutions.

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Next generation of renewable energy technologies

HORIZON-CL5-2026-04-Two-Stage-D3-02

Program:	**Horizon Europe Cluster 5.**
Típus:	**Research and Innovation Action**
TRL szint:	**4-5**
Támogatás projektenként:	**23.50 M EUR**
Támogatott projektek száma	**6**
Pályázati felület megnyílik:	**2025.december 18.**
Beadási határidő:	**2026.március 31.**

Felhívás linkje:

LINK

The proposal is expected to address high-risk and high return technology developments for game changing renewable energy technologies. It could cover, for example, catalyst development, renewable energy storage systems, integration of renewable energy technologies into a single energy generation system, hybrid renewable energy systems, heating & cooling systems, fuels production systems, (direct) solar fuels and solar driven chemical processes, hybrid electricity generation solutions between different renewable energy sources, direct utilization of renewable energy sources. The following areas are excluded from the scope of the topic as they fall within the scope of partnerships or other calls: hydrogen production through electrolysers, fuel cells, basic material research, batteries. This topic requires the effective contribution of SSH disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

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Innovative technologies and solutions to improve wind energy systems supporting the Strategic Energy Technology (SET) Plan on wind

HORIZON-CL5-2026-09-D3-03

Program:	**Horizon Europe Cluster 5.**
Típus:	**Research and Innovation Action**
TRL szint:	**6-8**
Támogatás projektenként:	**93.00 M EUR**
Támogatott projektek száma:	**1**
Pályázati felület megnyílik:	**2026. május 5.**
Beadási határidő:	**2026. szeptember 15.**

Felhívás linkje:

LINK

1. Implementation of the Strategic Energy Technology (SET) Plan research and innovation priorities for wind energy;
2. Efficient and effective support to wind energy research and innovation through alignment and cooperation among different actors, avoiding fragmentation of efforts;
3. Energy producers and consumers benefit from increased performance of wind energy technologies with the focus on efficiency and flexibility, reduced cost, improved reliability and sustainability, operation and maintenance, robustness and security during all stages of the lifetime of a wind energy farm from installation, operation and maintenance to decommissioning;
4. Increased contribution of wind energy to the energy system, with minimal impacts on health and the environment (notably biodiversity) and at the lowest possible cost.

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De-risking renewable fuel technologies through transnational pre-commercial procurement of renewable fuel industrial value chains

HORIZON-CL5-2026-11-D3-04

Program:	**Horizon Europe Cluster 5.**
Típus:	**Pre-commercial Procurement (PCP)**
TRL szint:	**8**
Támogatás projektenként:	**40 M EUR**
Támogatott projektek száma:	**1**
Pályázati felület megnyílik:	**2026. augusztus 4.**
Beadási határidő:	**2026. december 1.**

Felhívás linkje:

LINK

Proposals should steer the development of these technologies at EU level and bring them to the market. Pre-commercial procurement of R&D, validation and possibly, first deployment of industrial value chains of essential renewable fuel technologies is considered an effective tool to de-risk such activities and overcome the “valley of death” because real take off by engaging primarily concerned contracting entities is expected. The scope of this action is to design and bring industrial value chains of essential renewable fuel technologies at TRL 8 by the action end.

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Demonstration of solid biofuel supply and conversion to CHP from fully sustainable regional value chains

HORIZON-CL5-2026-11-D3-05

Program:	**Horizon Europe Cluster 5.**
Típus:	**Innovation Action**
TRL szint:	**7-8**
Támogatás projektenként:	**15 M EUR**
Támogatott projektek száma:	**2**
Pályázati felület megnyílik:	**2026. augusztus 4.**
Beadási határidő:	**2026. december 1.**

Felhívás linkje:

LINK

Proposals are expected to cover long-term scenarios for base load operation within the energy system network ensuring socioeconomic and environmental sustainability and in particular the exclusion of negative impacts on biodiversity, water balance, air quality and soil carbon stocks, which should be assessed by a comprehensive life cycle analysis.

Proposals are expected to demonstrate ways for efficient, cost-effective, robust, resilient and low pollution retrofitting of existing CHP plants in a local industrial context.

This topic requires the effective contribution of SSH disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, SSH research should look specifically at how synergies can be enhanced to achieve the topic's objective in respect of socioeconomic sustainability.

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Resource assessment for deep sedimentary and basement reservoirs

HORIZON-CL5-2026-11-D3-06

Program:	**Horizon Europe Cluster 5.**
Típus:	**Research and Innovation Action**
TRL szint:	**4-5**
Támogatás projektenként:	**18 M EUR**
Támogatott projektek száma:	**4**
Pályázati felület megnyílik:	**2026. augusztus 4.**
Beadási határidő:	**2026. december 1.**

Felhívás linkje:

LINK

The proposals are expected to contribute to the assessment of environmental and social impacts and to unlock geothermal resources marked by low natural permeability at depths between 2000-6000m.

The proposals are expected to take into account the impact of reservoir conditions and parameters (i.e. in-situ stress, temperature, geo-mechanical, chemical properties) on the development and performance of the geothermal resources, covering, when relevant, aspects such as the suitability for different stimulation techniques, well designs and completion technologies, the possibilities for the coproduction of raw materials, wellbore stability.

The proposals are expected to validate the benefit of the proposed solution in the context of state-of-the-art decision and risk analysis methods.

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Co-funding Strategic Energy Technology (SET) Plan renewable fuel value chains at EU, national, regional, and local level

HORIZON-CL5-2026-02-D3-08

Program:	**Horizon Europe Cluster 5.**
Típus:	**Programme Co-fund Action**
TRL szint:	**not relevant**
Támogatás projektenként:	**30 M EUR**
Támogatott projektek száma:	**1**
Pályázati felület megnyílik:	**2026. december 3.**
Beadási határidő:	**2027. március 31.**

Felhívás linkje:

LINK

This action is complementary to existing projects and instruments like the Clean Energy Technology (CET) Partnership with the vision to support, facilitate and reinforce that work by providing a focused programming framework and coordinated network of active and connected stakeholders in renewable fuels.

This action aims to create connected regional renewable fuel value chain activities across Europe, involving regions with lower innovation performances, by sharing and transferring capacities and know-how. The challenge is to overcome fragmentation of the value chains where different regions have different capacities (feedstock, technology, skills) and create collaboration at EU, national, regional or local level to collectively develop and implement complete value chains of renewable fuel technologies.

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Innovative technologies and solutions to improve wave and tidal energy systems

HORIZON-CL5-2027-02-D3-09

Program:	**Horizon Europe Cluster 5.**
Típus:	**Innovation Action**
TRL szint:	**6-7**
Támogatás projektenként:	**45 M EUR**
Támogatott projektek száma:	**1**
Pályázati felület megnyílik:	**2026. december 3.**
Beadási határidő:	**2027. március 31.**

Felhívás linkje:

LINK

The project implements the Strategic Energy Technology (SET) Plan implementation plan for ocean energy focussing on wave and tidal energy development. It will take into account the input defined in this context by the Implementation Working Group on ocean energy, the European Technology and Innovation Platform on ocean energy (ETIP Ocean) and the European Energy Research Alliance (EERA) joint programme on ocean energy.

As a basis for the annual work programmes, the project must carry out an analysis of the existing research and innovation activities in the field of ocean energy. This analysis includes projects supported by different EU funding programmes, including the Clean Energy Transition Partnership, and projects supported at national and regional level. This analysis allows to identify, for the different relevant research and innovation themes, the status of R&I for the specific theme, the results overall achieved, the initiatives ongoing and planned and the remaining gaps and challenges.

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Renewable Energy Valleys in Africa to increase energy security and energy access in Africa

HORIZON-CL5-2027-02-D3-10

Program:	Horizon Europe Cluster 5.
Típus:	Innovation Action
TRL szint:	7
Támogatás projektenként:	9 M EUR
Támogatott projektek száma:	2
Pályázati felület megnyílik:	2026. december 3.
Beadási határidő:	2027. március 31.

Felhívás linkje:

LINK

Actions must design, construct, commission and operate the demonstration installation, including aspects of energy needs and energy consumption, of grid stability and grid reinforcement in the region concerned. Actions should also develop and implement a tailored value chain approach, identifying the most suitable manufacturing value chains, on the basis of the local context, local material supply chain(s) and local workforce, with the objective of ensuring sustainable local economic development. African SMEs are expected to play an important role in the overall value chain and to contribute in the identifying the needs. Actions should also include the identification of technical, vocational and educational needs of the workforce and propose relevant training and qualification activities. Actions should finally define a market and business strategy that could take into consideration funding from international financial instruments and development finance programmes to ensure impact through a quick and viable commercial take-up of the technological solution demonstrated.

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Demonstration of hydropower technologies for efficient and forward-looking refurbishment of existing hydropower plants

HORIZON-CL5-2026-03-D3-11

Program:	**Horizon Europe Cluster 5.**
Típus:	**Innovation Action**
TRL szint:	**6-7**
Támogatás projektenként:	**17 M EUR**
Támogatott projektek száma:	**2**
Pályázati felület megnyílik:	**2027. augusztus 4.**
Beadási határidő:	**2027. december 1.**

Felhívás linkje:

LINK

Demonstration of hydropower technology that allow efficient and forward-looking refurbishment of existing hydropower plants. Examples: Innovative design of turbines and generators; new models and simulation tools for harsher operational conditions; digitalisation and artificial intelligence to advance instrumentation and controls and flexibility and to develop innovative operational strategies towards reduced O&M costs; transient aspect linked to new operating patterns of hydro plants to cope with climate changes and renewable base load; new materials for increased efficiency and resistance of equipment and increased performance, life time and resilience of infrastructure; low-GHG balance concrete; automated maintenance of metal hydropower turbines to reduce cost; operator hazards and reduce LCoE related to OPEX; improving water uses resilience via integrated operations and management; simulation and forecasting tools for integrated risk and mitigation analysis for climate change adaptation in response to extreme weather events by taking fully into account biodiversity requirements by targeting good ecological status; etc.

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Long-lifetime and optimised use of materials in recyclable Ag and In-free Si PV modules (EUPI-PV Partnership)

HORIZON-CL5-2026-03-D3-12

Program:	**Horizon Europe Cluster 5.**
Típus:	**Research and Innovation Action**
TRL szint:	**5**
Támogatás projektenként:	**15 M EUR**
Támogatott projektek száma:	**3**
Pályázati felület megnyílik:	**2025. december 18.**
Beadási határidő:	**2026. március 31.**

Felhívás linkje:

LINK

Proposals are expected to:

1. Extend module lifetime up to 40 years with extreme weather resilience;
2. Develop cell/module architectures/designs including recycled content, without In or Ag and without harmful substances (Pb, F, etc.) but without compromising their quality and reliability;
3. Develop module designs with improved recyclability and repairability;
4. Develop adapted testing methodologies and recycling standards;
5. Provide technical solutions for PV module repair in the field to extend lifetime;
6. Determine the environmental benefits of recycling precious metals.

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Industrial scale-up and circularity pathway for IPV technologies (EUPI-PV Partnership)

HORIZON-CL5-2026-07-D3-13

Program:	**Horizon Europe Cluster 5.**
Típus:	**Innovation Action**
TRL szint:	**6-7**
Támogatás projektenként:	**31.50 M EUR**
Támogatott projektek száma:	**3**
Pályázati felület megnyílik:	**2026. december 18.**
Beadási határidő:	**2026. március 31.**

Felhívás linkje:

LINK

Proposals are expected to demonstrate

1. Suitable IPV manufacturing, technically and economically innovative technologies at scale;
2. Flexible IPV production pilot lines to test the 100kWp+ scale (with linked demonstration sites);
3. Demonstration of recycling processes for various sizes, materials and technologies of IPV products (BIPV/IIPV, agriPV, VIPV, floating…).

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Improved system design for innovative PV applications (EUPI-PV Partnership)

HORIZON-CL5-2026-11-D3-14

Program:	Horizon Europe Cluster 5.
Típus:	Innovation Action
TRL szint:	7
Támogatás projektenként:	14 M EUR
Támogatott projektek száma:	4
Pályázati felület megnyílik:	2026. augusztus 4.
Beadási határidő:	2026. december 1.
Felhívás linkje:	LINK

Proposals must address only one of the two areas (agriPV or offshore/nearshore PV):
A comprehensive (system) modelling for an accurate and reliable energy yield assessment with comparable methodologies for biodiversity, plant-yield and quality in the case of agriPV, as well as power generation.
Advanced system components and system concepts/architectures of adequate scale that minimise impact on land/sea/environment while maximizing energy output/optimising connection to the grid. Resilience and adaptation of the systems to climate change impacts (extreme events, or in the case of agriPV, changing agricultural practices and/or crops choices, etc.).Standardisation for module and structure design for these applications. Permitting process definition.System demonstrators of adequate scale (min 5 MW) at different EU climate/sea zones.

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Production technologies for solar photovoltaics beyond the state-of-the-art (EUPI-PV Partnership)

HORIZON-CL5-2027-02-D3-15

Program:	Horizon Europe Cluster 5.
Típus:	Innovation Action
TRL szint:	7
Támogatás projektenként:	39 M EUR
Támogatott projektek száma:	3
Pályázati felület megnyílik:	2026. december 3.
Beadási határidő:	2027. március 31.
Felhívás linkje:	

LINK

Project results are expected to contribute to the following expected outcomes:

1. Increase the potential for commercialisation of innovative PV technologies creating a competitive technological know-how for the European PV industrial base;
2. Contribute to the objectives of the EU Solar PV Industry Alliance;
3. Support the execution of the solar energy joint research and innovation agenda.

Proposals are expected to demonstrate

1. Solar cells/modules with conversion efficiencies beyond those commercially available and degradation/reliability and performance at least on par with the most reliable commercially available technologies;
2. A multi-MWp-ready resilient, energy efficient, defect-free production technology for cells/modules;

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Industrial processes and equipment for innovative, reliable and scalable tandem technologies (EUPI-PV Partnership)

HORIZON-CL5-2027-07-D3-16

Program:	Horizon Europe Cluster 5.
Típus:	Innovation Action
TRL szint:	7
Támogatás projektenként:	30 M EUR
Támogatott projektek száma:	3
Pályázati felület megnyílik:	2027. augusztus 4.
Beadási határidő:	2027. december 1.
Felhívás linkje:	LINK

Project results are expected to contribute to all the following expected outcomes:
Increase the potential for commercialisation of tandem PV technologies creating a competitive technological know-how for the European PV industrial base;
Contribute to the objectives of the EU Solar PV Industry Alliance;
Support the execution of the solar energy joint research and innovation agenda.
Proposals are expected to:
Demonstrate tandem technologies with similar lifetimes to Si and higher efficiencies (beyond the Si limits);
Demonstrate interface and thin-film large scale engineering;
Demonstrate production processes and equipment ready for large scale deployment.

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PV based electrification of the economy: Designing & optimising PV systems supporting industrial electrification and promoting participation in electricity markets (EUPI-PV Partnership)

HORIZON-CL5-2027-07-D3-17

Program:	Horizon Europe Cluster 5.
Típus:	Innovation Action
TRL szint:	6-8
Támogatás projektenként:	18 M EUR
Támogatott projektek száma:	3
Pályázati felület megnyílik:	2027. augusztus 4.
Beadási határidő:	2027. december 1.
Felhívás linkje:	LINK

Project results are expected to contribute to all of the following expected outcomes as indicated for the proposed scope (high voltage DC PV systems or PV participation in electricity markets):

Scope 1: High-voltage DC PV systems:

Highly efficient PV systems, optimal utilisation of generated PV electricity, energy savings;

Decreased levelised cost of electricity (LCOE) and affordable electricity for industrial users.

Scope 2: PV participation in electricity markets:

Increased social profitability of PV by participation to ancillary services;

Energy efficient, cost competitive and flexible contribution of PV systems to the energy markets.

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Grid-forming capabilities for more resilient and RES-based electricity

HORIZON-CL5-2026-03-D3-18

Program:	**Horizon Europe Cluster 2.**
Típus:	**Innovation Action**
TRL szint:	**6-7**
Támogatás projektenként:	**20 M EUR**
Támogatott projektek száma:	**2**
Pályázati felület megnyílik:	**2025. december 18.**
Beadási határidő:	**2026. március 31.**

Felhívás linkje:

LINK

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

1. Improved preparedness of the electricity grids to support the EU's binding target for 2030 of minimum 42.5% renewables in gross final energy consumption, with the aspiration to reach 45% by 2030 and full decarbonisation by 2050;
2. Increased resilience and flexibility of electricity grids, which are able to better manage high shares of variable renewable energy systems (RES);
3. Transmission system operators (TSO) and Distribution system operators (DSO) develop and use modern procedures and techniques for maintaining grid stability and secure operation;
4. Seamless integration of power electronics-interfaced devices (PEID) in modern grids.

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Affordable and sustainable primary equipment for Future-Ready multi-terminal HVDC

HORIZON-CL5-2026-03-D3-19

Program:	**Horizon Europe Cluster 5.**
Típus:	**Innovation Action**
TRL szint:	**6-7**
Támogatás projektenként:	**24 M EUR**
Támogatott projektek száma:	**3**
Pályázati felület megnyílik:	**2025. december 18.**
Beadási határidő:	**2026. március 31.**

Felhívás linkje:

LINK

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

1. The expansion of High Voltage Direct Current (HVDC) infrastructure across Europe is facilitated and supports the EU's energy transition through more performant, sustainable and affordable HVDC equipment that ensure higher grid reliability and stability.
2. Enhanced affordability and interoperability of HVDC grid equipment.
3. Enhanced reliability and stability of HVDC Grid, through developing advanced protection and control equipment.
4. Enhanced environmental sustainability of HVDC equipment, by reducing their carbon footprint and enhancing their sustainability, e.g. through the development of SF6-free alternatives.

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Hybrid AI-Control Framework for a next-generation grid-scale energy storage and system integration

HORIZON-CL5-2026-03-D3-20

Program:	**Horizon Europe Cluster 5.**
Típus:	**Innovation Action**
TRL szint:	**6-8**
Támogatás projektenként:	**14 M EUR**
Támogatott projektek száma:	**2**
Pályázati felület megnyílik:	**2025. december 18.**
Beadási határidő:	**2026. március 31.**

Felhívás linkje:

LINK

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

1. Advanced digital twin and AI technologies (i.e. hybrid) to support proactive grid storage management and an effective integration with energy and ancillary services markets, for systems with high levels of renewable energy.
2. Optimized energy storage operations resulting in reduced operational and ancillary service costs, extended asset lifespans and increased revenues from market participation while boosting renewable energy uptake for decarbonization.
3. Optimized energy dispatch and storage cycling, increasing grid resilience and cost efficiency, aiding in lowering energy costs for consumers.

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Novel solutions for off-grid storage of renewable energy for critical infrastructures

HORIZON-CL5-2026-03-D3-21

Program:	**Horizon Europe Cluster 5.**
Típus:	**Research and Innovation Action**
TRL szint:	**4-5**
Támogatás projektenként:	**12 M EUR**
Támogatott projektek száma:	**3**
Pályázati felület megnyílik:	**2025. december 18.**
Beadási határidő:	**2026. március 31.**

Felhívás linkje:

LINK

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

1. Enhanced European knowledge and leadership in off-grid clean energy storage technologies.
2. Improved energy security and cost-effectiveness of Europe's energy systems, particularly for critical infrastructure.
3. Elimination of fossil-based backup solutions for critical infrastructures, strengthening European competitiveness.

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AI driven forecasting algorithms for Grid and Consumer friendly Energy Sharing – Societal Readiness pilot

HORIZON-CL5-2026-03-D3-22

Program:	**Horizon Europe Cluster 5.**
Típus:	**Innovation Action**
TRL szint:	**6-8**
Támogatás projektenként:	**12 M EUR**
Támogatott projektek száma:	**2**
Pályázati felület megnyílik:	**2025. december 19**
Beadási határidő:	**2026. március 31.**

Felhívás linkje:

LINK

Develop and test AI-driven forecasting algorithms that use machine learning processes to optimise the value of collective self-consumption through energy sharing for communities and citizens

Upscale AI tools and models for grid balancing and forecasting to ensure consumer participation in a distributed energy system.

Analysis of social interactions using advanced methods like game-theoretic models to highlight the role of active consumers and communities in energy systems.

Deeper understanding of the needs and concerns of diverse social groups involved in or potentially affected by the R&I development of the technology, thereby increasing the potential for beneficial societal uptake and building trust in results and outcomes.

Improvement of operation and maintenance of the grid and distributed assets.

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Data sharing to support the training and development of AI foundation models in the energy sector

HORIZON-CL5-2026-11-D3-23

Program:	**Horizon Europe Cluster 5.**
Típus:	**Innovation Action**
TRL szint:	**7-8**
Támogatás projektenként:	**30 M EUR**
Támogatott projektek száma:	**3**
Pályázati felület megnyílik:	**2026. augusztus 4.**
Beadási határidő:	**2026. december 1.**

Felhívás linkje:

LINK

1. Effective and innovative methods for gathering, sharing and using large data sets in energy applications for the purpose of training AI models while ensuring privacy and security.
2. Advanced and - wherever possible - open-source AI foundation models to support the digitalisation of the energy system, through improved grid observability, forecasting of supply and demand, advanced storage and renewables integration, demand side flexibility and energy efficiency.
3. Enhanced cooperation, knowledge sharing and interoperability among energy system actors for secure and seamless data exchange.
4. Advanced methodologies for AI model development ensuring that the results are FAIR beyond the project ending, open source and accommodating for technology evolution.

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Large-scale operational validation and upscaling of state-of-the-art (Generative) AI tools and models powering a next generation digital energy system

HORIZON-CL5-2027-02-D3-24

Program:	**Horizon Europe Cluster 5.**
Típus:	**Innovation Action**
TRL szint:	**7-8**
Támogatás projektenként:	**20 M EUR**
Támogatott projektek száma:	**2**
Pályázati felület megnyílik:	**2026. december 3.**
Beadási határidő:	**2027. március 31.**

Felhívás linkje:

LINK

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

1. Advanced, secure frugal (energy-, resource-, data- and cost-efficient, sustainable) AI tools for real-time grid operations (including protection), market operations (if relevant) and consumer empowerment in distributed energy systems.
2. A demonstrated AI development environment integrated with the upgraded digital spine of the energy system and energy-saving consumer applications.
3. Scaled-up capabilities for learning at edge nodes and federated systems using agent-based architectures.
4. A governance framework and operating model for the Gen(AI)-powered digital spine.

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Advanced TSO control rooms to enhance grid observability, stability and resilience

HORIZON-CL5-2027-07-D3-25

Program:	Horizon Europe Cluster 5.
Típus:	Innovation Action
TRL szint:	6-8
Támogatás projektenként:	28.5 M EUR
Támogatott projektek száma:	3
Pályázati felület megnyílik:	2027. augusztus 4.
Beadási határidő:	2027. december 1.

Felhívás linkje:

LINK

Project results should contribute to all the following outcomes:

1. Enhanced reliability, resilience, and efficiency of electricity transmission grids. Grid congestion is managed efficiently;
2. Enhanced observability of grids and improved forecasting of supply, demand, grid capacity availability, and flexibility;
3. Transmission system operators (TSO) leverage modern digital solutions and employ improved systems to effectively manage their grids and improve interoperability with other TSOs;
4. Vendor-agnostic reference architectures, solutions and tools are developed to help advancing the TSO control room design and operation.

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Advanced Distribution Management Systems (ADSM) for more efficient and flexible distribution grids

HORIZON-CL5-2027-07-D3-26

Program:	Horizon Europe Cluster 5.
Típus:	Innovation Action
TRL szint:	6-8
Támogatás projektenként:	28.5 M EUR
Támogatott projektek száma:	3
Pályázati felület megnyílik:	2027. augusztus 4.
Beadási határidő:	2027. december 1.

Felhívás linkje:

LINK

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

1. Enhanced reliability, resilience, controllability and efficiency of electricity distribution grids. Congestion in distribution grids is managed effectively;
2. Distribution system operators (DSO) leverage modern digital solutions and employ improved systems to effectively manage their grids and improve interoperability with TSOs and other DSOs;
3. Vendor-agnostic reference architectures, solutions and tools are developed to help advancing the ADSM design and operation and effectively manage a broad range of grid services.

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Integrated Approaches for Retrofitting Infrastructures with Innovative Energy Storage Technologies

HORIZON-CL5-2027-07-D3-27

Program:	Horizon Europe Cluster 5.
Típus:	Innovation Action
TRL szint:	6-8
Támogatás projektenként:	22.5 M EUR
Támogatott projektek száma:	3
Pályázati felület megnyílik:	2027. augusztus 4.
Beadási határidő:	2027. december 1.

Felhívás linkje:

LINK

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

1. Improved energy security of the energy system by offering cost-effective and efficient solutions for additional diverse and flexible energy storage capacities.
2. Improve the sustainability and circularity of energy storage systems.
3. Enhanced economic viability of energy storage by utilizing existing infrastructures.

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Community of practice - Data-Driven Decision-Making in Energy

HORIZON-CL5-2027-07-D3-28

Program:	Horizon Europe Cluster 5.
Típus:	Coordination and Support Actions
TRL szint :	nem releváns
Támogatás projektenként:	6 M EUR
Támogatott projektek száma:	1
Pályázati felület megnyílik:	2027. augusztus 4.
Beadási határidő:	2027. december 1.

Felhívás linkje:

LINK

Facilitate the coordination and cooperation of key actors in the energy value chains to build a community of practice focused on developing and maintaining key tools and technologies for using data and analytics in planning, operating and maintaining the European electricity grids, while actively managing high shares of RES in the system; Involve, cooperate with, and/or build synergies with major European and international initiatives and groupings that are active in this field; Create a European ecosystem of innovation hubs that bring together key stakeholders in the energy sector to collaborate on digitalization projects, providing a space for experimentation and agile innovation; Showcase targeted cooperation between grid operators and research & academia for implementing specific projects and/or programmes;

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Pre-commercial appraisal for CO2 aquifer storage

HORIZON-CL5-2026-03-D3-29

Program:	**Horizon Europe Cluster 5.**
Típus:	**Innovation Action**
TRL szint:	**7-8**
Támogatás projektenként:	**25.00 M EUR**
Támogatott projektek száma:	**5**
Pályázati felület megnyílik:	**2025. december 18.**
Beadási határidő:	**2026. március 31.**

Felhívás linkje:

LINK

Project results are expected to contribute to the following outcome:

Support pre-commercial CO2 geological storage appraisal, speed up storage site development, support planning of CO2 capture projects (and related source to store linkages), and help closing the storage capacity gap, in particular in Central, Eastern and Southern Europe.

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Advancements in Direct Air Capture

HORIZON-CL5-2027-02-D3-30

Program:	Horizon Europe Cluster 5.
Típus:	Innovation Action
TRL szint:	7 or higher
Támogatás projektenként:	16 M EUR
Támogatott projektek száma:	2
Pályázati felület megnyílik:	2026. december 3.
Beadási határidő:	2027. március 31.

Felhívás linkje:

LINK

Projects are expected to demonstrate:

1. Improving the cost efficiency of the capture and regeneration process, including Balance of Plant;
2. Improving material performance and process designs (e.g. capture/desorption capacity and kinetics, durability, long-term stability in air);
3. Potential for manufacturing and scale-up (recycling and reuse of materials);
4. Flexible operation under intermittent or surplus renewable energy supply.

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Support to the implementation of an EU policy framework for CO2 transport and storage infrastructure

HORIZON-CL5-2027-02-D3-31

Program:	Horizon Europe Cluster 5.
Típus:	Coordination and Support Actions
TRL szint:	nem releváns
Támogatás projektenként:	5 M EUR
Támogatott projektek száma:	1
Pályázati felület megnyílik:	2026. december 3.
Beadási határidő:	2027. március 31.

Felhívás linkje:

LINK

The project is expected to assist stakeholders involved in the CO2 infrastructure network in implementing the upcoming legislative framework for CO2 infrastructure.

Issues to address include market and cost structure, cross-border integration, interoperability and planning, technical harmonisation and investment incentives for new infrastructure, third-party access, along-chain liability, competent regulatory authorities, tariff regulation, ownership and contractual models, baseline of the state of play of current legislation on various aspects of the value chain.

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Delivery of industrial CCUS clusters – Societal Readiness pilot

HORIZON-CL5-2027-07-D3-32

Program:	Horizon Europe Cluster 2.
Típus:	Innovation Action
TRL szint:	7-8
Támogatás projektenként:	30.00 M EUR
Támogatott projektek száma:	3
Pályázati felület megnyílik:	2027. augusztus 4.
Beadási határidő:	2027. december 1.

Felhívás linkje:

LINK

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

1. Near-to-market solutions for the safe integration and use of CCUS technologies in the energy- and carbon-intensive industry;
2. A pipeline of projects that have the potential for commercial scale-up.
3. Deeper understanding of the needs and concerns of diverse social groups involved in or potentially affected by the R&I development of the technology, thereby increasing the potential for beneficial societal uptake and building trust in results and outcomes.

Projects are expected to be the de-risking first step to develop local or regional industrial CCUS clusters, i.e. (multi) source and (multi) sink solutions for the decarbonisation of the hard-to-abate industries of the region. Projects are expected to be the basis and orientation for future full-size projects. To maximise the impact, projects should have a substantial industrial involvement.

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