Horizonte Europa Energía

WorkProgramme 2023-2024

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CDTI
30 Enero 2023

HORIZONTE EUROPA
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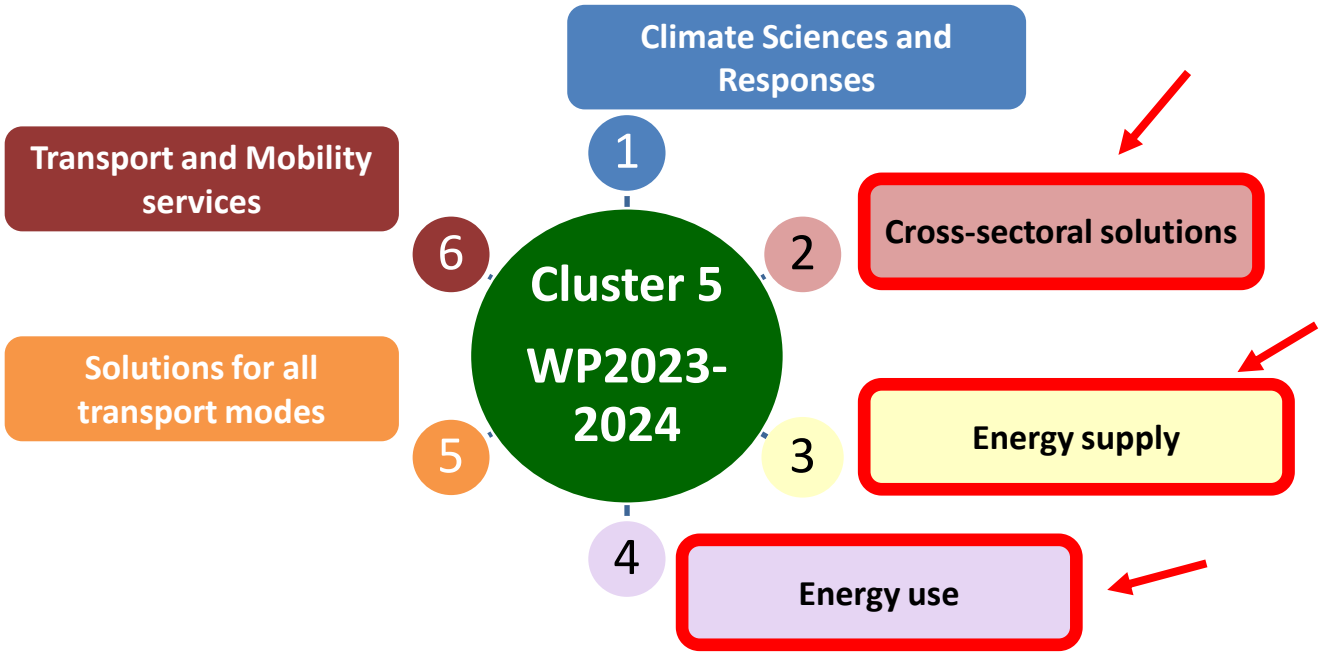
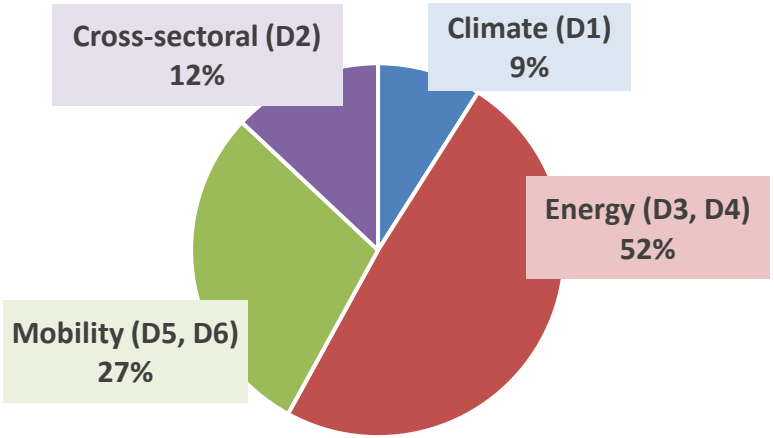
Centro para el Desarrollo Tecnológico y la Innovación

Horizon Europe (2021-2027) Estructura

Cluster 5 – Destinations



Cluster 5 - Budget allocation 2023-2024



Budget 2023-2024: **2.386 M€**

Convocatorias “Energía” (2023-2024)

90 topics
1.200 M€

Destination 2	Cross-cutting	• 2 topics – 14 M€
	Breakthrough technologies	• 1 topic –10 M€
Destination 3	Renewable energy	• 44 topics – 605 M€
	Energy systems, grids and storage	• 21 topics – 281 M€
	Carbon capture, utilisation and storage (CCUS)	• 3 topics – 70 M€
Destination 4	Buildings	• 17 topics – 172 M€
	Industry	• 2 topics –36 M€

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GOBIERNO DE ESPAÑA MINISTERIO DE CIENCIA E INNOVACIÓN

CDTI INNOVACIÓN

Calendario de convocatorias (2023-2024)

Destination	Call	Opening	Deadline
Destination 3	HORIZON-CL5-2023-D3-01	13 Diciembre 2022	30 Marzo 2023
Destination 2	HORIZON-CL5-2023-D2-01	13 Diciembre 2022	18 Abril 2023
Destination 4	HORIZON-CL5-2023-D4-01	13 Diciembre 2022	20 Abril 2023
Destination 3	HORIZON-CL5-2023-D3-02	4 Mayo 2023	5 Septiembre 2023
Destination 4	HORIZON-CL5-2023-D4-02	4 Mayo 2023	5 Septiembre 2023
Destination 3	HORIZON-CL5-2023-D3-03	4 Mayo 2023	10 Octubre 2023
Destination 3	HORIZON-CL5-2024-D3-01	12 Septiembre 2023	16 Enero 2024
Destination 2	HORIZON-CL5-2024-D2-01	7 Diciembre 2023	18 Abril 2024
Destination 4	HORIZON-CL5-2024-D4-01	7 Diciembre 2023	18 Abril 2024
Destination 3	HORIZON-CL5-2024-D3-02	7 Mayo 2024	5 Septiembre 2024
Destination 4	HORIZON-CL5-2024-D4-02	7 Mayo 2024	5 Septiembre 2024

Destination 2
Áreas

Destination 2 – Cross-cutting

- **Open pilot line/testbed for hydrogen** for testing hydrogen production technology

- **Support the deployment of R&I results for climate mitigation**. Synergies with the Innovation Fund

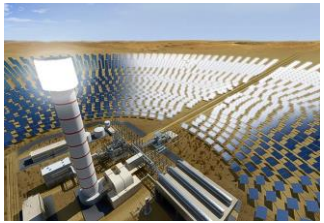
Destination 2 – Breakthrough technologies

- **Emerging energy technologies for a climate neutral Europe**: novel bottom-up technological solutions with breakthrough potential across all parts of the energy sector value chain. Consider at least one of the following areas:
  - Energy distribution and transmission
  - Long-term energy storage
  - Novel energy generation/conversion methods

Destination 3
Áreas

Destination 3 - Renewable Energy (1/3)

- **Concentrated Solar Power (CSP)**: ; next generation thermal energy storage for CSP ; digital tools for CSP and solar thermal plants
- **Solar Thermal**: ; solar for industrial process power and/or heat ; ; industrial manufacturing for lower-cost components and systems
- **Photovoltaics**: ; PV integrated in buildings and in infrastructure ; ; PV-integrated electric mobility ; Community-integrated PV ; ; floating PV ; solar for industrial process power and/or heat ; ; crystalline silicon technology ; perovoskite solar cells and modules ; ; advanced manufacturing of PV ; low-power PV ; resource-efficiency of PV in production, use and disposal
- **Heat pumps**: innovative components and configurations



Destination 3 - Renewable Energy (2/3)

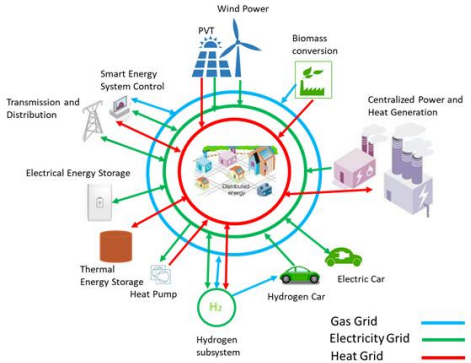
- **Bioenergy**: ; biomass heat and/or CHP including carbon capture ; ; carbon fixation technologies for biogenic flue gases
- **Renewable fuels**: ; next generation biofuel/synthetic renewable fuel technologies ; renewable fuels for aviation/shipping ; smart concepts of integrated biorefineries ; improvement of light harvesting and carbon fixation with synthetic biology ; intermediate renewable energy carrier technologies for transport fuels
- **Hydropower**: hydropower equipment for improving techno-economic efficiency and equipment resilience in refurbishment
- **Geothermal**: ; exploration technologies for geothermal resources in a wide range of geological settings ; smart use of geothermal electricity and heating and cooling in the energy system ; integration of geothermal heating and cooling in industry

Destination 3 - Renewable Energy (3/3)

- **Ocean Energy**: ; demonstration of tidal/wave energy farms ; ; power take-off and control systems for wave energy devices ; ; critical technologies for the future ocean energy farms
- **Wind energy**: ; critical technologies to improve lifetime, decommissioning and circularity of offshore and onshore wind energy ; ; digital twin for forecasting power production ; environmental/socio-economic impacts in the deployment, operation and decommissioning of offshore wind farms ; demonstrations of floating wind systems
- **Renewable energy valleys**: to increase energy independence
- **Cross-technologies**: ; next generation RES ; green transition and energy access in Africa ; market-uptake

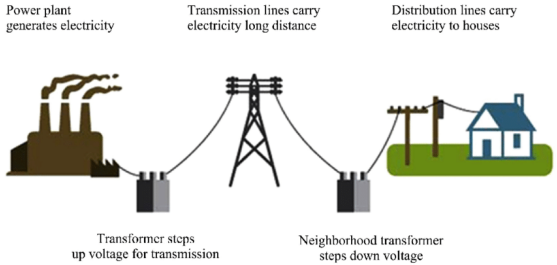
Destination 3 - Energy Systems, Grids and Storage (1/2)

- **Energy sector integration**: integrating and combining power, heat, gas and other sectors (industry and mobility) to a cost-optimized, flexible energy system of systems with massively integrated RES
- **Energy system planning and operation**: innovative grid planning tools and operation, including digital tools based on Artificial Intelligence-based forecasting systems
- **Active consumers, Markets and Energy Communities**: optimal engagement of distributed active consumers and energy communities
- **TSO/DSO flexibility management**: Distributed Energy Resources (DER) flexibilities for transmission and distribution systems



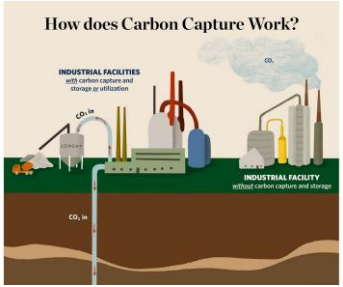
Destination 3 - Energy Systems, Grids and Storage (2/2)

- **Electricity system reliability and resilience**: development of new methods and simulation tools that integrate the impact of additional RES, investigating new grid architectures
- **Digitalisation of the energy system, interoperability and data**: development and piloting of Artificial Intelligence-Internet of Things Edge-cloud and platform solutions
- **Transmission of energy**: ; converters and transmission systems and components for a resilient grid ; cable systems
- **Storage development and integration**: ; long-term electricity storage ; ; large-scale, seasonal storage ; pumped storage equipment and tools



Destination 3 - Carbon Capture, Use and Storage (CCUS)

- **CO2 transport and storage demo projects**: new demonstration projects connecting CO2 sources with potential storage sites, connecting CCUS clusters to CO2 transport and storage infrastructures
- **Carbon Capture and Use for the production of fuels**: development of energy-efficient, economically and environmentally viable CO2 conversion technologies
- **Direct Air Capture Conversion and Storage (DACCS) and Bioenergy with Carbon Capture and Storage (BECCS) for CO2 removal/negative emissions:** advance the technological development of DACCS and BECCs, addressing the environmental, social and economic challenges and benefits



Destination 4
Áreas

Destination 4 - Buildings (1/3)

- **Zero-emissions buildings**
- Renovation of **historical buildings**
- Interoperable solutions for **positive energy districts**
- **Thermal management** of high energy demand IT systems equipment in tertiary buildings
- Decarbonization of buildings through **energy efficiency and electrification**
- Low-disruptive **renovation processes using prefabricated solutions**
- **Smart-grid ready buildings**

Destination 4 - Buildings (2/3)

- Uses of **lifecycle data for the management of buildings**
- Improve the **resilience of vulnerable buildings and people-centric built environment** in disruptive events and changing climate
- Built-environment decarbonization pathways through **technological, social and policy innovation for renovation solutions**
- **Fast-tracking of built environment construction and renovation** with local value chains
- Supporting the **creation of an accessible and inclusive built environment**

Destination 4 - Buildings (3/3)

- **Industralisation of circular deep renovation workflows**
- **Robotics** and other automated solutions **for assembly, renovation and maintenance** in a sustainable built environment
- **Building Information Modelling-based processes and digital twins** for facilitating and optimizing circular energy renovation
- Design for **adaptability, re-use and deconstruction of buildings**, in line with the principles of circular economy
- Digital solutions to foster **participative design, planning and management of buildings, neighbourhoods and urban districts**

Destination 4 - Industry

- Integration of renewable heat or industrial waste heat in heat-to-cold conversion systems **to generate cold for industrial processes**

- Alternative heating systems for efficient, flexible and electrified **heat generation in industry**

Destination 2
Topics

Destination 2
Cross-cutting

Destination 2 – Cross-cutting

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Cross-cutting	HORIZON-CL5-2023-D2-01-06	Open Pilot Line/Test Bed for hydrogen	13/12/2022	18/04/2023	IA	10	10	1	
	HORIZON-CL5-2023-D2-01-07	Support for the deployment of R&I results for climate mitigation. Synergies with the ETS Innovation Fund	13/12/2022	18/04/2023	CSA	4	1	4	Lump Sum

Destination 2
Breakthrough technologies

Destination 2 – Breakthrough technologies

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Emerging Breakthrough Technologies and climate solutions	HORIZON-CL5-2024-D2-01-04	Emerging energy technologies for a climate neutral Europe	07/12/2023	18/04/2024	RIA	10,00	1,5-2,5	4	

Destination 3
Topics

Destination 3
Renewable Energy

Destination 3 – Renewables (1/6)

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Energy Valleys	HORIZON-CL5-2023-D3-01-01	Renewable Energy Valleys to increase energy independence while accelerating the green transition in Europe	13/12/2022	30/03/2023	IA	40,00	20	2	
Wind	HORIZON-CL5-2023-D3-01-05	Critical technologies for the offshore wind farm of the Future	13/12/2022	30/03/2023	RIA	18,00	6	3	
	HORIZON-CL5-2023-D3-02-14	Digital twin for forecasting of power production to wind energy demand	04/05/2023	05/09/2023	RIA	12,00	6	2	Lump Sum
	HORIZON-CL5-2023-D3-02-15	Critical technologies to improve the lifetime, efficient decommissioning and increase the circularity of offshore and onshore wind energy systems	04/05/2023	05/09/2023	RIA	12,00	4	3	
	HORIZON-CL5-2024-D3-02-08	Minimisation of environmental, and optimisation of socio-economic impacts in the deployment, operation and decommissioning of offshore wind farms	07/05/2024	05/09/2024	RIA	10,00	5	2	Lump Sum
	HORIZON-CL5-2024-D3-02-09	Demonstrations of innovative floating wind concepts	07/05/2024	05/09/2024	IA	30,00	15	2	

Destination 3 – Renewables (2/6)

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Photovoltaics	HORIZON-CL5-2023-D3-01-02	PV integration in buildings and in infrastructure	13/12/2022	30/03/2023	IA	16,00	8	2	
	HORIZON-CL5-2023-D3-01-03	Floating PV Systems	13/12/2022	30/03/2023	IA	14,00	7	2	
	HORIZON-CL5-2023-D3-01-04	Solar Systems for Industrial Process Power and/or Heat	13/12/2022	30/03/2023	IA	14,00	7	2	
	HORIZON-CL5-2023-D3-02-11	Advanced concepts for crystalline Silicon technology	04/05/2023	05/09/2023	RIA	9,00	3	3	
	HORIZON-CL5-2023-D3-02-12	Large Area Perovskite solar cells and modules	04/05/2023	05/09/2023	IA	14,00	7	2	
	HORIZON-CL5-2023-D3-02-13	Operation, Performance and Maintenance of PV Systems	04/05/2023	05/09/2023	IA	10,00	5	2	
	HORIZON-CL5-2024-D3-01-01	Alternative equipment and processes for advanced manufacturing of PV technologies	12/09/2023	16/01/2024	IA	24,00	12	2	
	HORIZON-CL5-2024-D3-01-02	Low-power PV	12/09/2023	16/01/2024	IA	6,00	3	2	Lump Sum
	HORIZON-CL5-2024-D3-02-05	PV-integrated electric mobility applications	07/05/2024	05/09/2024	IA	14,00	7	2	
	HORIZON-CL5-2024-D3-02-06	Innovative, Community-Integrated PV systems	07/05/2024	05/09/2024	IA	10,00	5	2	
	HORIZON-CL5-2024-D3-02-07	Resource Efficiency of PV in Production, Use and Disposal	07/05/2024	05/09/2024	CSA	3,00	3	1	Lump Sum

Destination 3 – Renewables (3/6)

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Renewable Fuels	HORIZON-CL5-2023-D3-01-06	Demonstration of advanced biofuel technologies for aviation and/or shipping	13/12/2022	30/03/2023	IA	18,00	9	2	Lump Sum
	HORIZON-CL5-2023-D3-01-07	Demonstration of synthetic renewable fuel technologies for aviation and/or shipping	13/12/2022	30/03/2023	IA	18,00	9	2	
	HORIZON-CL5-2023-D3-02-07	Development of next generation advanced biofuel technologies	04/05/2023	05/09/2023	RIA	12,00	4	3	
	HORIZON-CL5-2023-D3-02-08	Development of microalgae and/or direct solar fuel production and purification technologies for advanced aviation and /or shipping fuels	04/05/2023	05/09/2023	RIA	8,00	4	2	
	HORIZON-CL5-2024-D3-01-03	Demonstration of improved intermediate renewable energy carrier technologies for transport fuels	12/09/2023	16/01/2024	IA	20,00	10	2	Lump Sum
	HORIZON-CL5-2024-D3-01-04	Improvement of light harvesting and carbon fixation with synthetic biology and/or bio-inspired//biomimetic pathways for renewable direct solar fuels production	12/09/2023	16/01/2024	RIA	8,00	4	2	
	HORIZON-CL5-2024-D3-02-02	Development of next generation synthetic renewable fuel technologies	07/05/2024	05/09/2024	RIA	12,00	4	3	
	HORIZON-CL5-2024-D3-02-03	Development of smart concepts of integrated energy driven bio-refineries for co-production of advanced biofuels, bio-chemicals and biomaterials	07/05/2024	05/09/2024	RIA	7,00	3.5	2	

Destination 3 – Renewables (4/6)

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Bioenergy	HORIZON-CL5-2023-D3-02-01	Development of near zero-emission biomass heat and/or CHP including carbon capture	04/05/2023	05/09/2023	RIA	8,00	4	2	
	HORIZON-CL5-2024-D3-01-05	Development of carbon fixation technologies for biogenic flue gases	12/09/2023	16/01/2024	RIA	8,00	4	2	
Ocean	HORIZON-CL5-2023-D3-01-08	Demonstration of sustainable tidal energy farms	13/12/2022	30/03/2023	IA	40,00	20	2	
	HORIZON-CL5-2023-D3-02-10	Development of innovative power take-off and control systems for wave energy devices	04/05/2023	05/09/2023	RIA	8,00	4	2	Lump Sum
	HORIZON-CL5-2024-D3-01-08	Demonstration of sustainable wave energy farms	12/09/2023	16/01/2024	IA	38,00	12-13	3	
	HORIZON-CL5-2024-D3-02-04	Critical technologies for the future ocean energy farms	07/05/2024	05/09/2024	RIA	8,00	4	2	

Destination 3 – Renewables (5/6)

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Solar Thermal CSP	HORIZON-CL5-2023-D3-01-04	Solar Systems for Industrial Process Power and/or Heat	13/12/2022	30/03/2023	IA	14,00	7	2	
	HORIZON-CL5-2023-D3-02-03	Industrial manufacturing for lower-cost solar thermal components and systems	04/05/2023	05/09/2023	IA	6,00	3	2	
	HORIZON-CL5-2023-D3-02-02	Novel thermal energy storage for CSP	04/05/2023	05/09/2023	RIA	5,00	2,5	2	
	HORIZON-CL5-2024-D3-02-01	Digital tools for CSP and solar thermal plants	07/05/2024	05/09/2024	IA	6,00	3	2	Lump Sum
Heat Pumps	HORIZON-CL5-2023-D3-02-04	Innovative components and configurations for heat pump systems	04/05/2023	05/09/2023	RIA	6,00	2	3	
Hydropower	HORIZON-CL5-2023-D3-02-09	Demonstration of sustainable hydropower refurbishment	04/05/2023	05/09/2023	IA	8,00	8	1	Lump Sum
	HORIZON-CL5-2024-D3-01-07	Development of hydropower equipment for improving techno-economic efficiency and equipment resilience in refurbishment situations	12/09/2023	16/01/2024	RIA	8,00	4	2	

Destination 3 – Renewables (6/6)

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Geothermal	HORIZON-CL5-2023-D3-02-05	Advanced exploration technologies for geothermal resources in a wide range of geological settings	04/05/2023	05/09/2023	RIA	8,00	4	2	
	HORIZON-CL5-2023-D3-02-06	Smart use of geothermal electricity and heating and cooling in the energy system	04/05/2023	05/09/2023	IA	15,00	5	3	
	HORIZON-CL5-2024-D3-01-06	Innovative applications/integration of geothermal heating and cooling in industry	12/09/2023	16/01/2024	RIA	9,00	3	3	
Cross-Technology International Cooperation	HORIZON-CL5-2023-D3-02-16	Accelerating the green transition and energy access in Africa	04/05/2023	05/09/2023	IA	20,00	5	4	
	HORIZON-CL5-2024-D3-01-09	Africa-EU CO-FUND action	12/09/2023	16/01/2024	Co-fund with 50% EC share	10,00	10	1	
Breakthrough	HORIZON-CL5-2024-D3-01-10	Next generation of renewable energy technologies	12/09/2023	16/01/2024	RIA	27,00	3	9	
Market Uptake	HORIZON-CL5-2024-D3-02-10	Market Uptake Measures of renewable energy systems	07/05/2024	05/09/2024	CSA	8,00	2	4	Lump Sum

Destination 3

Energy Systems, Grids and Storage

Destination 3 – Energy Systems, Grids and Storage (1/3)

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Energy Sector Integration	HORIZON-CL5-2023-D3-03-01	Increasing the efficiency of innovative static energy conversion devices for electricity and heat/cold generation	04/05/2023	10/10/2023	RIA	9,00	5	2	
	HORIZON-CL5-2023-D3-03-02	Integration of renewable gases other than hydrogen or methane and which have not access to gas grids and interfacing with electricity and heat sectors	04/05/2023	10/10/2023	IA	12,00	6	2	
Energy System Planning and Operation	HORIZON-CL5-2023-D3-03-03	System approach for grid planning and upgrade in support of a dominant electric mobility (vehicles and vessels) using AI tools	04/05/2023	10/10/2023	IA	11,00	11	1	
	HORIZON-CL5-2024-D3-01-11	AI Testing and Experimentation Facility (TEF) for the energy sector – bringing technology to the market	12/09/2023	16/01/2024	IA	16,00	5	3	
	HORIZON-CL5-2024-D3-01-17	Development and integration of advanced software tools in SCADA systems for High, Medium and Low voltage AC/DC hybrid systems	12/09/2023	16/01/2024	IA	12,00	6	2	
Active consumers, Markets and Energy Communities	HORIZON-CL5-2023-D3-03-04	Digital tools for enhancing the uptake of digital services in the energy market	04/05/2023	10/10/2023	IA	11,00	3-4	3	
	HORIZON-CL5-2023-D3-03-05	Creation of a standardised and open-source peer-to-peer energy sharing platform architecture for the energy sector	04/05/2023	10/10/2023	IA	5,00	5	1	

Destination 3 – Energy Systems, Grids and Storage (2/3)

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
TSO/DSO Flexibility Management	HORIZON-CL5-2023-D3-01-10	Supporting the development of a digital twin to improve management, operations and resilience of the EU Electricity System in support to RePowerEU	13/12/2022	30/03/2023	IA	20,00	6-7	1	
	HORIZON-CL5-2024-D3-01-12	Energy Management Systems for flexibility services	12/09/2023	16/01/2024	IA	10,00	5	2	
Electricity System reliability and resilience - grid architecture	HORIZON-CL5-2023-D3-01-11	Demonstration of DC powered data centres, buildings, industries and ports	13/12/2022	30/03/2023	IA	18,00	9	2	
	HORIZON-CL5-2023-D3-01-16	Support action to the SET-Plan IWG on HVDC & DC Technologies	13/12/2022	30/03/2023	CSA	0,60	0,6	1	
	HORIZON-CL5-2024-D3-01-13	DC and AC/DC hybrid transmission and distribution systems	12/09/2023	16/01/2024	RIA	13,00	6	2	
Electricity System reliability and resilience - risk preparedness	HORIZON-CL5-2023-D3-03-06	Components and interfacing for AC & DC side protection system – AC grid: components and systems for grid optimisation	04/05/2023	10/10/2023	IA	10,00	5	2	
	HORIZON-CL5-2024-D3-01-14	Condition & Health Monitoring in Power Electronics (PE) - Wide Band Gap PE for the energy sector	12/09/2023	16/01/2024	RIA	13,00	4	3	

Destination 3 – Energy Systems, Grids and Storage (3/3)

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Transmission of Energy	HORIZON-CL5-2023-D3-01-12	Development of converter and MVDC, HVDC and High-Power Transmission systems and components for a resilient grid	13/12/2022	30/03/2023	IA	22,00	11	2	Lump Sum
	HORIZON-CL5-2024-D3-01-15	HVAC, HVDC and High-Power cable systems	12/09/2023	16/01/2024	RIA	16,00	5-6	3	Lump Sum
Green digitalisation of the energy system - interoperability and data	HORIZON-CL5-2023-D3-01-15	Supporting the green and digital transformation of the energy ecosystem and enhancing its resilience through the development and piloting of AI-IoT Edge-cloud and platform solutions	13/12/2022	30/03/2023	IA	18,00	18	1	
Storage development and integration	HORIZON-CL5-2023-D3-01-09	Waste heat reutilisation from data centres	13/12/2022	30/03/2023	IA	12,00	6	2	
	HORIZON-CL5-2023-D3-01-13	Development of novel long-term electricity storage technologies	13/12/2022	30/03/2023	RIA	14,00	4	3	
	HORIZON-CL5-2023-D3-01-14	Demonstration of innovative, large-scale, seasonal heat and/or cooling storage technologies for decarbonisation and security of supply	13/12/2022	30/03/2023	IA	30,00	10	3	
	HORIZON-CL5-2024-D3-01-16	Demonstration of innovative pumped storage equipment and tools in combination with innovative storage management systems	12/09/2023	16/01/2024	IA	8,00	8	1	

Destination 3
Carbon Capture, Use and Storage

Destination 3 – Carbon Capture, Use and Storage

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Carbon capture, Utilization and Storage	HORIZON-CL5-2023-D3-01-17	Development of CO2 transport and storage demo projects	13/12/2022	30/03/2023	IA	40,00	20	2	
	HORIZON-CL5-2024-D3-02-11	CCU for the production of fuels	07/05/2024	05/09/2024	IA	15,00	7	2	Lump Sum
	HORIZON-CL5-2024-D3-02-12	DACCS and BECCS for CO2 removal/negative emissions	07/05/2024	05/09/2024	IA	15,00	5-7	2-3	Lump Sum

Destination 4
Topics

Destination 4
Buildings

Destination 4 – Buildings (1/2)

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Energy Efficient Buildings	HORIZON-CL5-2023-D4-01-01	Innovative cost-efficient solutions for zero-emission buildings	13/12/2022	20/04/2023	IA	10,00	3-5	3	
	HORIZON-CL5-2023-D4-01-02	Future-proofing historical buildings for the clean energy transition	13/12/2022	20/04/2023	RIA	9,00	3-4,5	3	
	HORIZON-CL5-2023-D4-01-03	Interoperable solutions for positive energy districts (PEDs), including a better integration of local renewables and local excess heat sources	13/12/2022	20/04/2023	IA	8,00	3-4	2	Lump Sum
	HORIZON-CL5-2023-D4-01-04	Thermal management and energy optimisation of high energy demand IT systems equipment in tertiary buildings	13/12/2022	20/04/2023	RIA	6,00	2-3	3	Lump Sum
	HORIZON-CL5-2023-D4-01-05	Innovative solutions for cost-effective decarbonisation of buildings through energy efficiency and electrification	13/12/2022	20/04/2023	IA	25,00	10-15	3	
	HORIZON-CL5-2024-D4-01-01	Low-disruptive renovation processes using integration of prefabricated solutions for energy-efficient buildings	07/12/2023	18/04/2024	IA	10,00	3-5	3	
	HORIZON-CL5-2024-D4-01-02	Smart grid-ready buildings	07/12/2023	18/04/2024	IA	10,00	3-5	3	

Destination 4 – Buildings (2/2)

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Built4People	HORIZON-CL5-2023-D4-02-01	Innovative uses of lifecycle data for the management of buildings and buildings portfolios (Built4People Partnership)	04/05/2023	05/09/2023	IA	10,00	3-5	3	Lump Sum
	HORIZON-CL5-2023-D4-02-02	Solutions for the identification of vulnerable buildings and people-centric built environment, and for improving their resilience in disruptive events and altered conditions in a changing climate (Built4People Partnership)	04/05/2023	05/09/2023	IA	10,00	3-5	3	
	HORIZON-CL5-2023-D4-02-03	Demonstrate built-environment decarbonisation pathways through bottom-up technological, social and policy innovation for adaptive integrated sustainable renovation solutions (Built4People Partnership)	04/05/2023	05/09/2023	IA	12,00	4-6	3	
	HORIZON-CL5-2023-D4-02-04	Fast-tracking and promoting built environment construction and renovation innovation with local value chains (Built4People Partnership)	04/05/2023	05/09/2023	CSA	2,00	2	1	Lump Sum
	HORIZON-CL5-2023-D4-02-05	Supporting the creation of an accessible and inclusive built environment (Built4People Partnership)	04/05/2023	05/09/2023	IA	10,00	3-5	3	Lump Sum
	HORIZON-CL5-2024-D4-02-01	Industrialisation of sustainable and circular deep renovation workflows (Built4People Partnership)	07/05/2024	05/09/2024	IA	16,00	3-5,5	2	Lump Sum
	HORIZON-CL5-2024-D4-02-02	Robotics and other automated solutions for assembly, renovation and maintenance in a sustainable built environment (Built4People Partnership)	07/05/2024	05/09/2024	RIA	8,00	3-4	2	
	HORIZON-CL5-2024-D4-02-03	BIM-based processes and digital twins for facilitating and optimising circular energy renovation (Built4People Partnership)	07/05/2024	05/09/2024	IA	8,00	3-4	2	Lump Sum
	HORIZON-CL5-2024-D4-02-04	Design for adaptability, re-use and deconstruction of buildings, in line with the principles of circular economy (Built4People Partnership)	07/05/2024	05/09/2024	RIA	8,00	3-4	2	
	HORIZON-CL5-2024-D4-02-05	Digital solutions to foster participative design, planning and management of buildings, neighbourhoods and urban districts (Built4People Partnership)	07/05/2024	05/09/2024	IA	10,00	3-5	3	Lump Sum

Destination 4
Industry

Destination 4 – Industry

Subarea	Topic code	Topic title	Opening	Deadline	Type of Action	Budget	Budget per project	Number of projects expected	Lump Sum Topics
Industry	HORIZON-CL5-2023-D4-01-06	Integration of renewable heat or industrial waste heat in heat-to-cold conversion systems to generate cold for industrial processes	13/12/2022	20/04/2023	IA	20,00	10	2	Lump Sum
	HORIZON-CL5-2024-D4-01-03	Alternative heating systems for efficient, flexible and electrified heat generation in industry	07/12/2023	18/04/2024	IA	16,00	5	3	Lump Sum

Lump Sum funding

Financiación de proyectos con Lump Sum

- Financiación por una cantidad fijada, en lugar de reembolso de costes incurridos

One lump sum share is fixed in the grant agreement for each work package

- This amount is paid when the activities in the work package are completed; as today, **payment does not depend on a successful outcome, but on the completion of activities**

- Model Grant Agreement Lump Sum
- Methodology to determine the amount of the Lump Sum
- Detailed Lump Sum budget table
- Standard slides for applicants
- Frequently Asked Questions at the Funding & Tenders Portal

Webinar de la Comisión – 9 febrero

Otras oportunidades

1. Partenariado institucional “Clean Hydrogen Partnership”
2. Partenariado co-fund “Driving Urban Transitions” (DUT)
3. Partnerariado co-fund “Clean Energy Transition” (CET)
4. Misión de Ciudades
5. EIC Acelerator Challenges

1. Partenariado “Clean Hydrogen Partnership”

- **1.000 M€** en el período 2021-2027

- Miembros del partenariado => Comisión Europea y 2 Asociaciones:

  “Hydrogen Europe” – Industria hydrogeneurope.eu

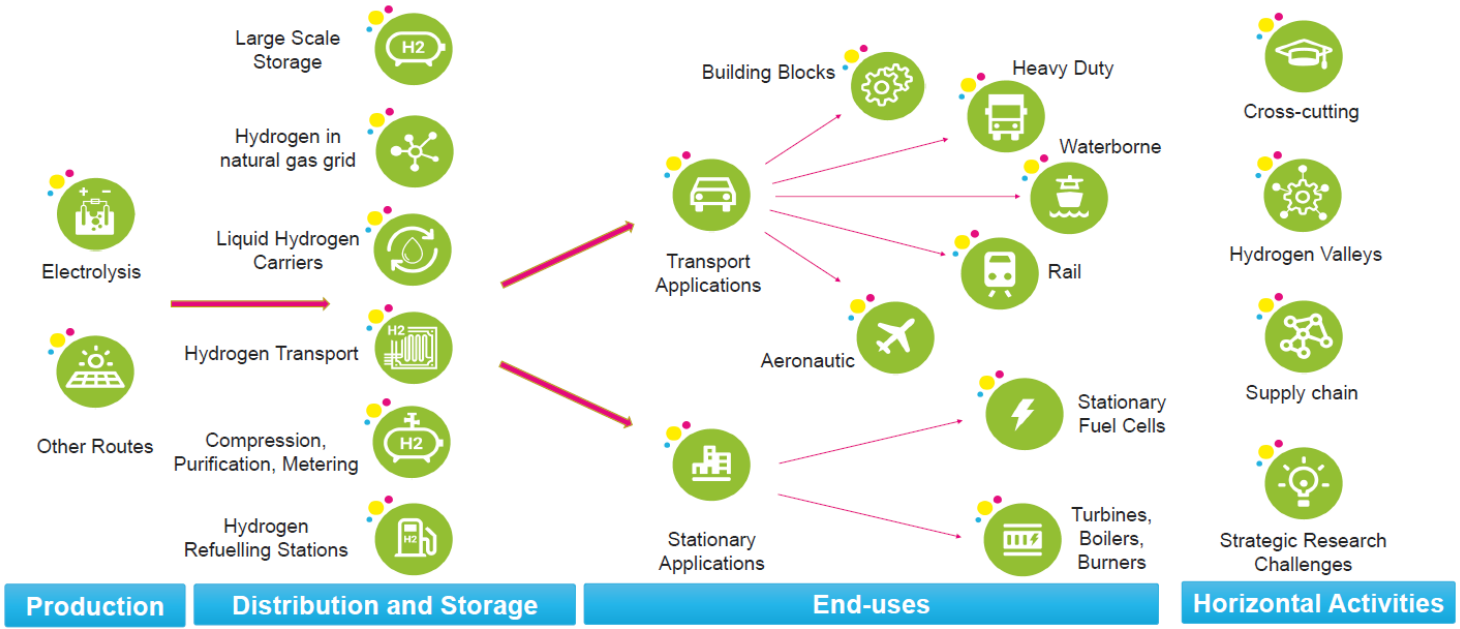
  “Hydrogen Europe Research” – Grupos de Investigación hydrogeneuroperesearch.eu

  Principal ventaja:

  - Participar en la elaboración de los Programas de Trabajo anuales (AWP)

- En principio **mismas condiciones de participación que en Horizon Europe**, pero las convocatorias pueden incluir criterios de elegibilidad adicionales

Partenariado “Clean Hydrogen Partnership”



Clean Hydrogen Partnership – convocatoria 2023

Call HORIZON-JTI-CLEANH2-2023

- Renewable hydrogen production
- Hydrogen storage and distribution
- Transport applications
- Heat and Power
- Cross-cutting
- Hydrogen valleys
- Strategic Research Challenges

Total budget: 195 M€

26 topics

Call Identifier HORIZON-JTI-CLEANH2-2023	Budget (EUR mill)	Publication	Deadline
HORIZON-JTI-CLEANH2-2023-1	195.00	17 January 2023	18 April 2023

[Programa de Trabajo 2023]

[Convocatoria 2023]

- [Infoday de la JTI – 26 enero - online]
- [Infoday de CDTI – 14 febrero - presencial]

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2. Co-fund “Driving Urban Transitions” (DUT)

Partnership Concept

Positive Energy Districts and Neighbourhoods
transforming the urban energy system

Downsizing District Doughnuts
an integrated approach for urban greening and circularity transitions

The 15 Minutes Cities
rethinking the urban mobility system and space

1ª convocatoria
Plazo 1ª fase:
21/11/2022

1ª convocatoria
Plazo 2ª fase:
03/05/2023

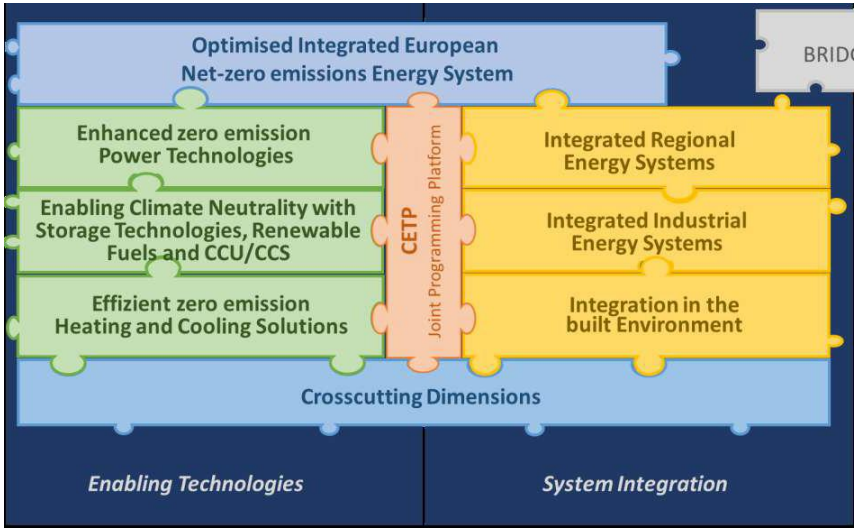
- Web de DUT https://dutpartnership.eu/
- Jornada AEI-CDTI partenariados co-fund – 7 septiembre 2022 (consultar presentaciones)
- Infoday 1 – 20 septiembre 2022 Infoday 2 – 18 octubre 2022
- Plataforma para búsqueda de socios https://dut-calls.b2match.io/home
- Contactos: Milvia Soumbounou partenariadoshe@cdti.es; AEI urban@aei.gob.es

3. Co-fund “Clean Energy Transition” (CET)

1ª convocatoria
Plazo 1ª fase:
23/11/2022

1ª convocatoria
Plazo 2ª fase:
20/03/2023

Challenges



- Web de CET https://cetpartnership.eu/
- Jornada AEI-CDTI– 7 septiembre 2022
- Infoday de CET – 13 septiembre 2022
  https://cetpartnership.eu/cetpartnership-joint-call-2022-infoday-online
- Plataforma para búsqueda de socios:
  https://cetp-call-launch-2022.b2match.io/home
- Contactos:
  Marina Sopeña partenariadoshe@cdti.es
  AEI era-energia@aei.gob.es

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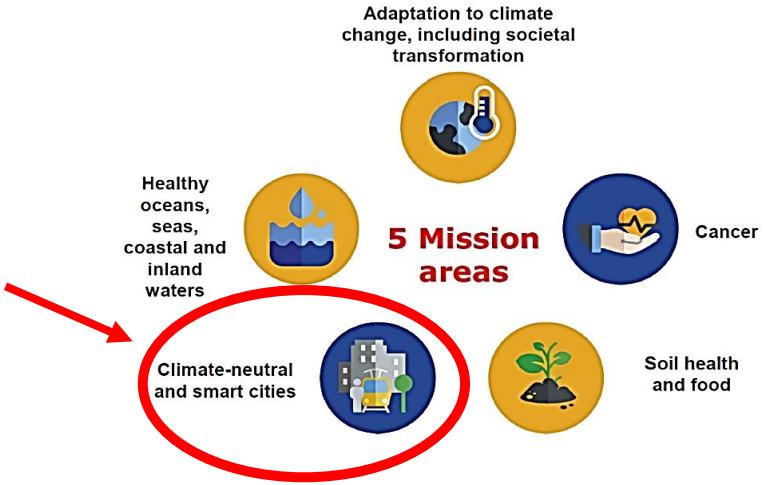
4. Misiones en Horizonte Europa

Cartera de acciones multidisciplinares, de plazo determinado, con meta audaz e inspiradora y de éxito cuantificable, que tiene un impacto en la sociedad y la ciudadanía.

Cinco áreas de misiones



[Infoday de CDTI – 11 enero]

[Infoday de la Comisión – 17 enero]

[Cities Mission Web Page]

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

Topic	Opening	Deadline
HORIZON-MISS-2023-CIT-01-01: Co-designed smart systems and services for user-centred shared **zero-emission mobility of people and freight in urban areas** (2Zero, CCAM and Cities' Mission)	10/01/2023	27/04/2023
HORIZON-MISS-2023-CIT-01-02: **Positive clean energy district (PED) digital twins** – from modelling to creating climate neutral Cities	10/01/2023	27/04/2023
HORIZON-MISS-2023-CIT-02-01: **Associating Ukrainian cities** to the Climate-neutral and smart cities Mission	04/04/2023	06/09/2023
HORIZON-MISS-2023-CLIMA-CITIES-01-01: **Urban greening and re-naturing** for urban regeneration, resilience and climate neutrality	10/01/2023	27/04/2023

WorkProgramme 2023-2024

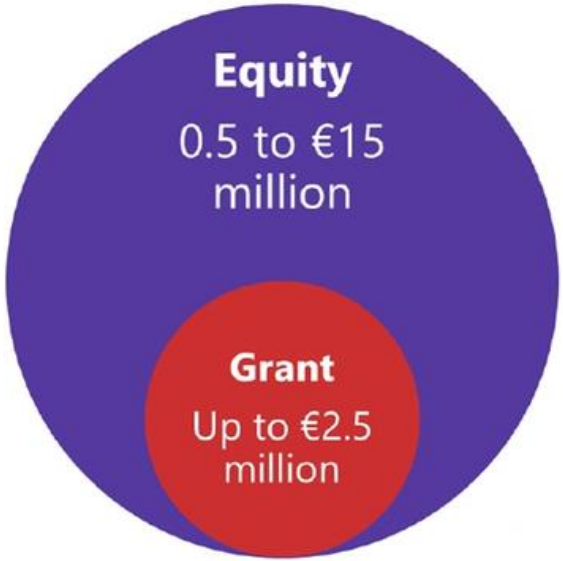
5. EIC Acelerator Challenges

Negocios de **alto riesgo para el capital privado SOLO**…

…basados en una propuesta de valor con **tecnología propia** y con capacidad de **crear nuevos mercados** o trasformar los existentes...

…liderados por un **equipo comprometido**

Instrumento que cubre el despliegue en mercado



GRANT: 0,5-2,5 M€ (70%)

TRL 6 - TRL 8

Demos, piloto, certificaciones, etc.

INVESTMENT: Up to 15 M€+ (<25%)

Cualquier TRL

escalado del negocio

incluido marketing, despliegue comercial, producción, etc.

Energy Storage

Budget : €100 million

TRANSFORM THE EU INTO A RESOURCE-EFFICIENT ECONOMY AND ENSURE INCREASING EUROPE'S ENERGY INDEPENDENCE FROM UNRELIABLE SUPPLIERS AND VOLATILE FOSSIL FUELS WHILE PRESERVING EUROPE'S NATURAL ENVIRONMENT AND TACKLING CLIMATE CHANGE.

Groundbreaking innovations meeting the following objectives:

- To store electric and/or thermal energy at low cost, high density, high charging/discharging efficiency and enhanced durability.
- To design technological approaches for energy storage at different scales, duration and uses.
- To develop technologies minimising their carbon footprint, and integrated into products and services embrace circular and life cycle thinking approach supporting transition to a circular economy.

Quedamos a vuestra disposición

EIC Accelerator

+

Ecosistemas Europeos de Innovación

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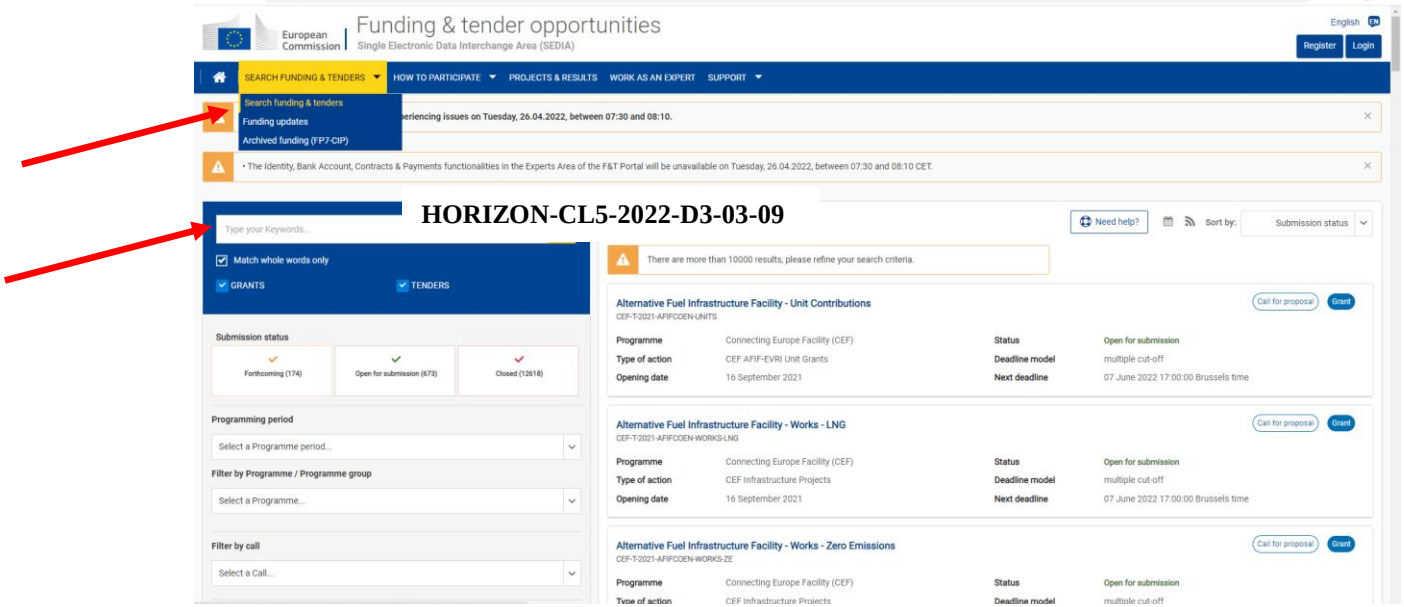
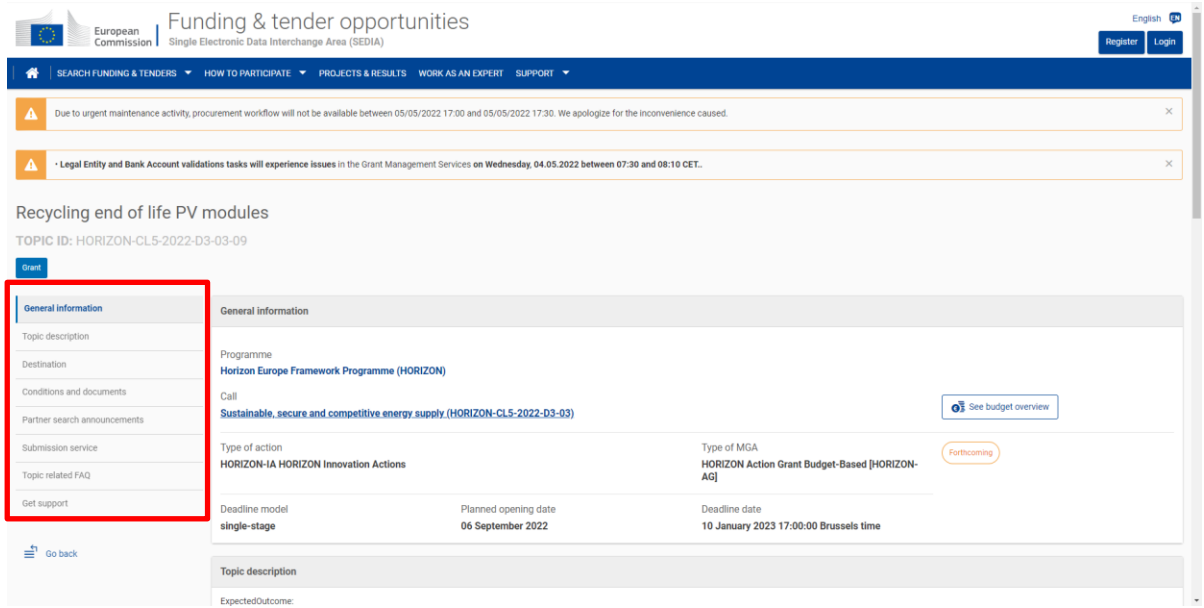
CDTI INNOVACIÓN

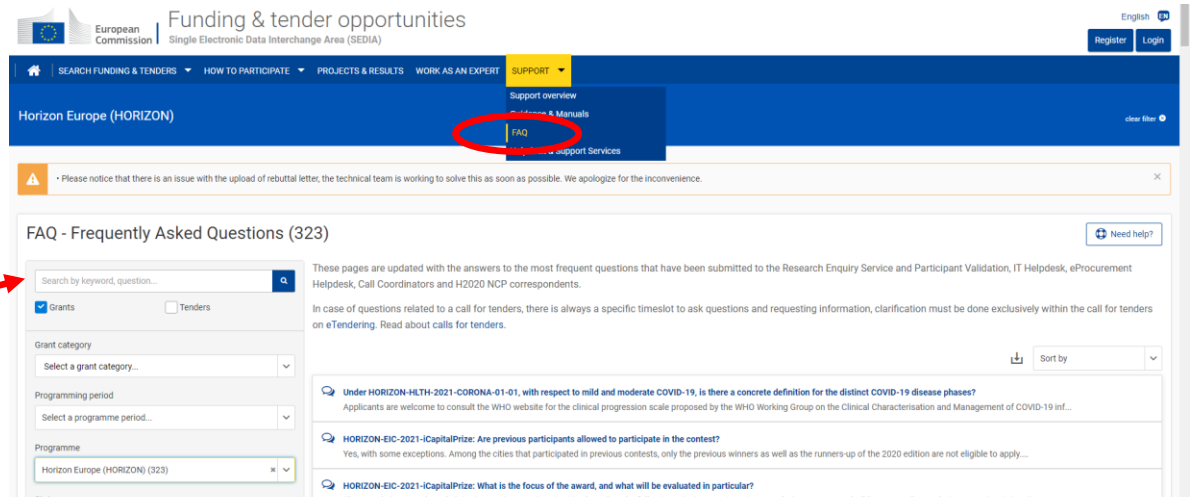
Revisar el topic en el Funding Portal



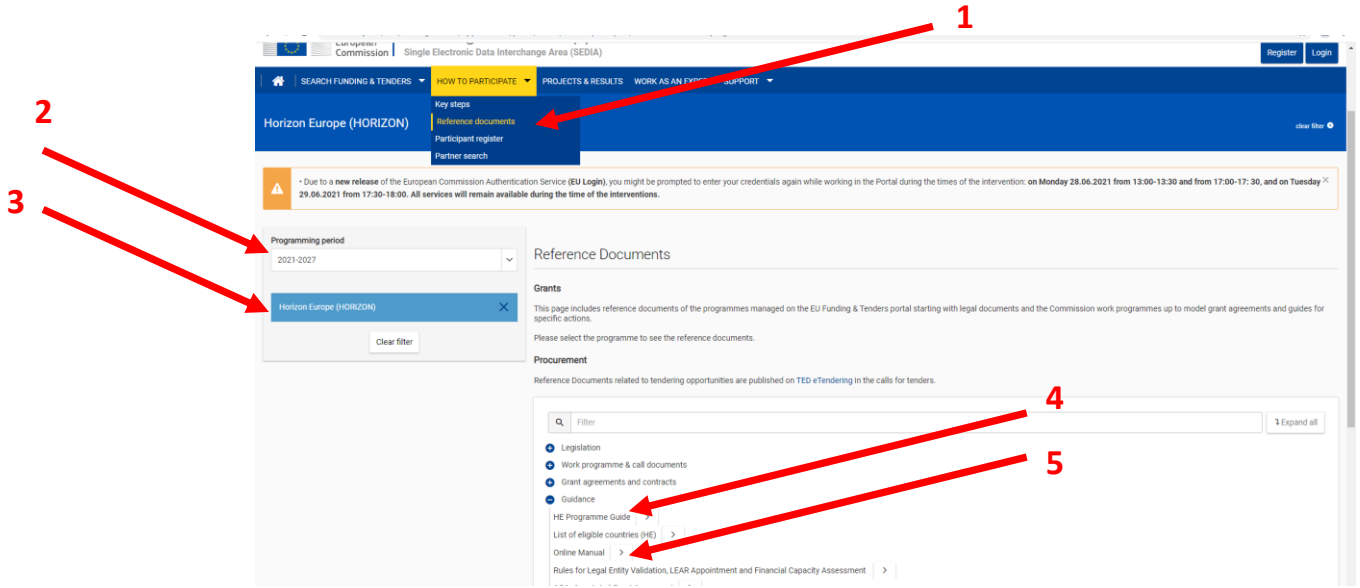
Revisar el topic en el Funding Portal



Otra forma de acceder a las FAQs

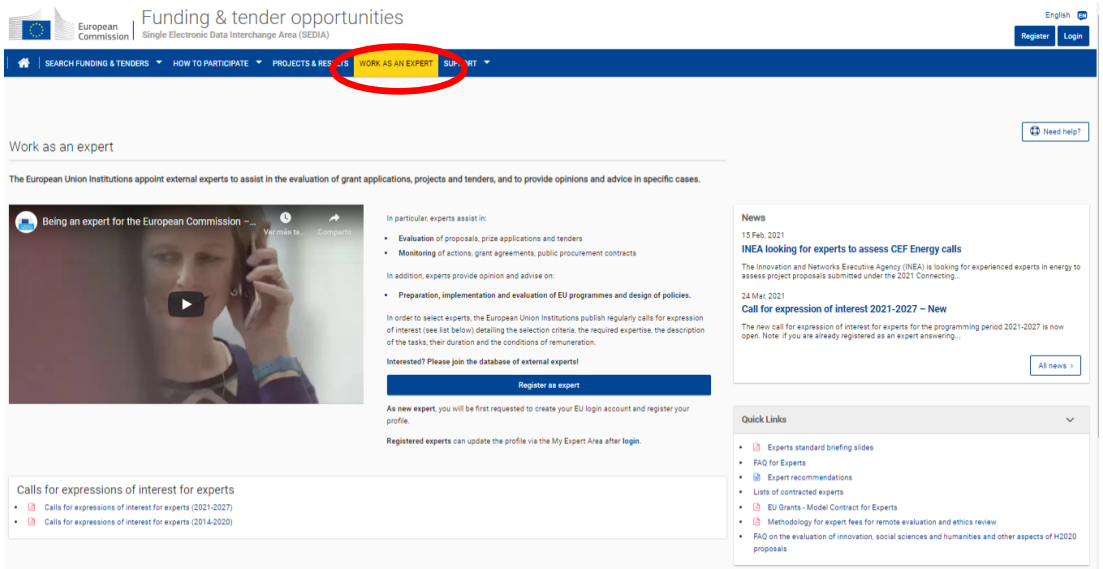


Programme Guide, Online Manual y “IT How to”



[Reference Documents]

Apúntate como Evaluador

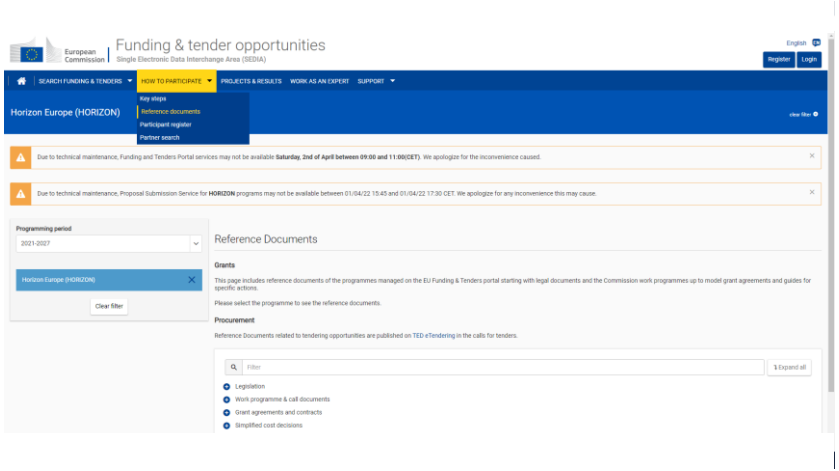


Se buscan diferentes perfiles: Científico-técnicos, business, emprendedores, entidades públicas, asociaciones, NGOs…

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/work-as-an-expert

Información de interés

- Funding and Tenders Portal
- Work Programme Clúster 5
- Proposal Template
- Programme Guide
- Online Manual
- IT How to



Información de interés

Webinars European Commission

- How to prepare a successful proposal in Horizon Europe (24 March 2021)
- A successful proposal for Horizon Europe (21 April 2021)
- Tips and Tricks while writing your Horizon Europe proposal (23 June 2021)
- Recipe for success: Tips and tricks to writing your Horizon Europe proposal (29 September 2022)
- Dissemination, Communication and Exploitation (9 June 2021)
- The Funding & tenders Portal for beginners (27 May 2021)
- New features Funding & Tenders Portal (28 September 2021)
- The Gender Equality Plan (23 June 2022)
- Horizon Results Booster (17 November 2022)
- Submission and evaluation, Grant Agreement Preparation, Legal and Financial Aspects (10 December 2021)
- Grant Agreement Preparation, Legal and Financial Aspects (26 January 2022)
- Cost reporting of other costs (with focus on internal invoicing) (23 March 2022)
- Lump Sum funding: How does it work and what are the next steps? (7 April 2022)
- Lump Sum funding: How to write a proposal? (19 May 2022)
- Lump Sum funding: How does it work? How to write a proposal? (20 October 2022)
- Avoiding errors in declaring personnel costs in Horizon 2020 grants (30 November 2022)

Información de interés

Guía del participante – Horizonte Europa

- El proceso de participación
- Elaboración y presentación de una propuesta
- Puesta en marcha, desarrollo, seguimiento y finalización de los proyectos
- Proceso de evaluación de propuestas
- Preparación y firma del acuerdo de subvención del proyecto

https://www.horizonteeuropa.es/guia-del-participante-horizonte-europa

Información de interés

Webinars CDTI-SOST

Cómo preparar una propuesta exitosa

12 webinarios online

Con experiencias de participantes

(Febrero-Junio 2022)

Presentaciones y grabaciones

SESIONES
Sesión 1: Cómo completar la Parte A en propuestas de Horizonte Europa
Sesión 2: Excelencia. Concepto , metodología, estado del arte y ambición del proyecto
Sesión 3: Open Science. Plan de gestión de datos
Sesión 4: Dimensión de género en propuestas de HE
Sesión 5: Apartado de Impacto en proyectos de HE
Sesión 6: Impacto. Planes de explotación
Sesión 7: Implementación. Paquetes de trabajo, recursos y descripción del consorcio
Sesión 8: Implementación. Plan de riesgos
Sesión 9: Aspectos éticos en HE
Sesión 10: Aspectos de seguridad en propuestas de HE
Sesión 11: "Lump sum" en propuestas de HE
Sesión 12: Estandarización en proyectos de HE

Información de interés

Infoday Bruselas y Brokerage Event. 15-16 diciembre 2022

- Formato online
- Brokerage Event el día 15 por la tarde

Más información en la [web del Infoday]

Información de interés

Infoday nacional Horizonte Europa Energía y Misión de Ciudades

- Formato híbrido: presencial y online
- En CDTI, 11 de enero de 2023

Más información en el portal español de Horizonte Europa

Más información

Portal español Horizonte Europa
https://www.horizonteeuropa.es/

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Canal de Telegram
RSS 1
ESHorizonte2020

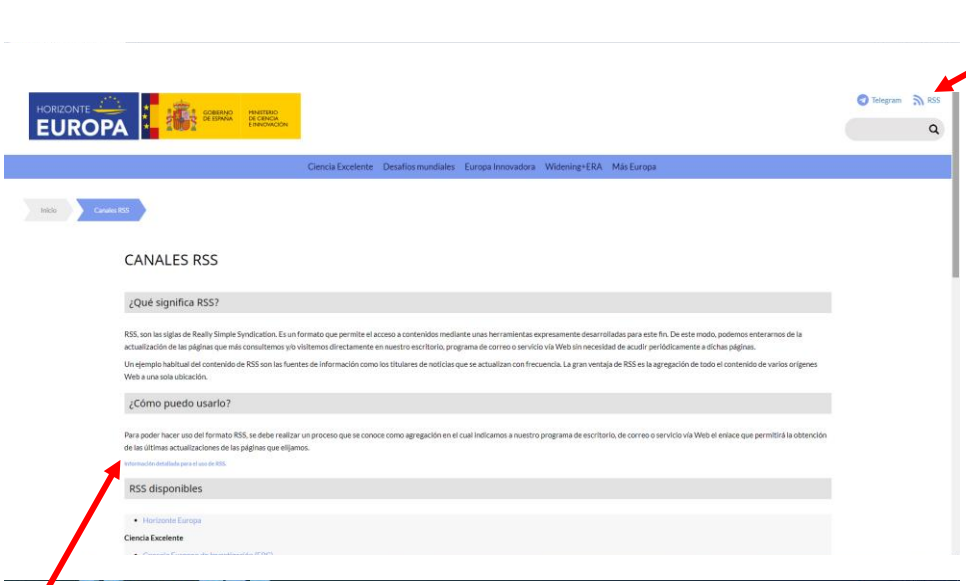
2

¡SÍGUENOS EN TWITTER!

@HE_Energia_CDTI

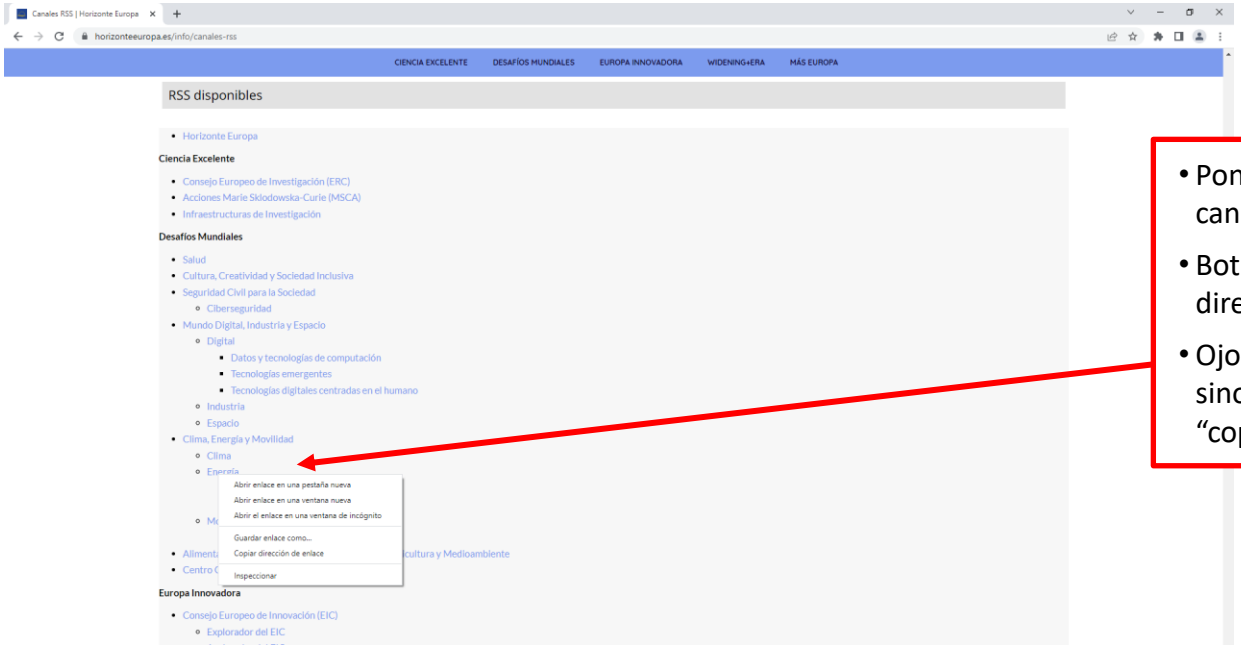
Horizonte Europa Clúster 5 Energía. CDTI
https://twitter.com/HE_Energia_CDTI

Canales RSS en www.horizonteeuropa.es (1/6)



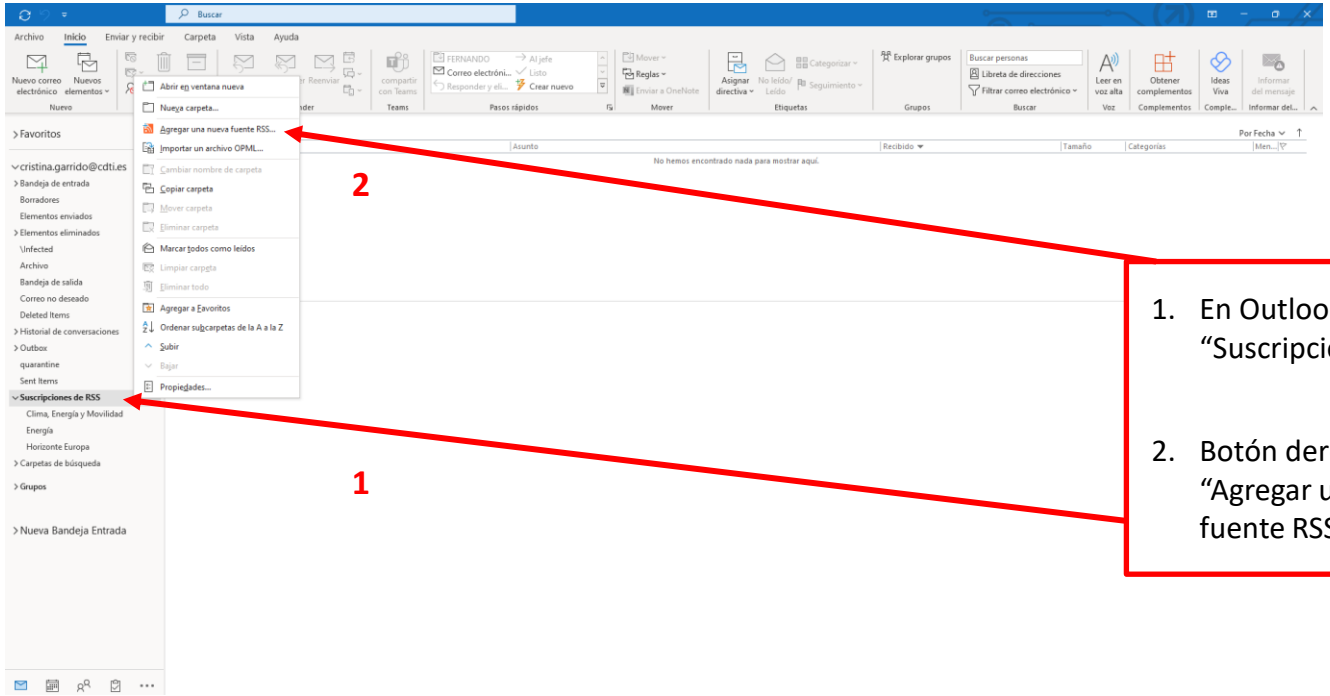
Cómo usarlo

Canales RSS en www.horizonteeuropa.es (2/6)



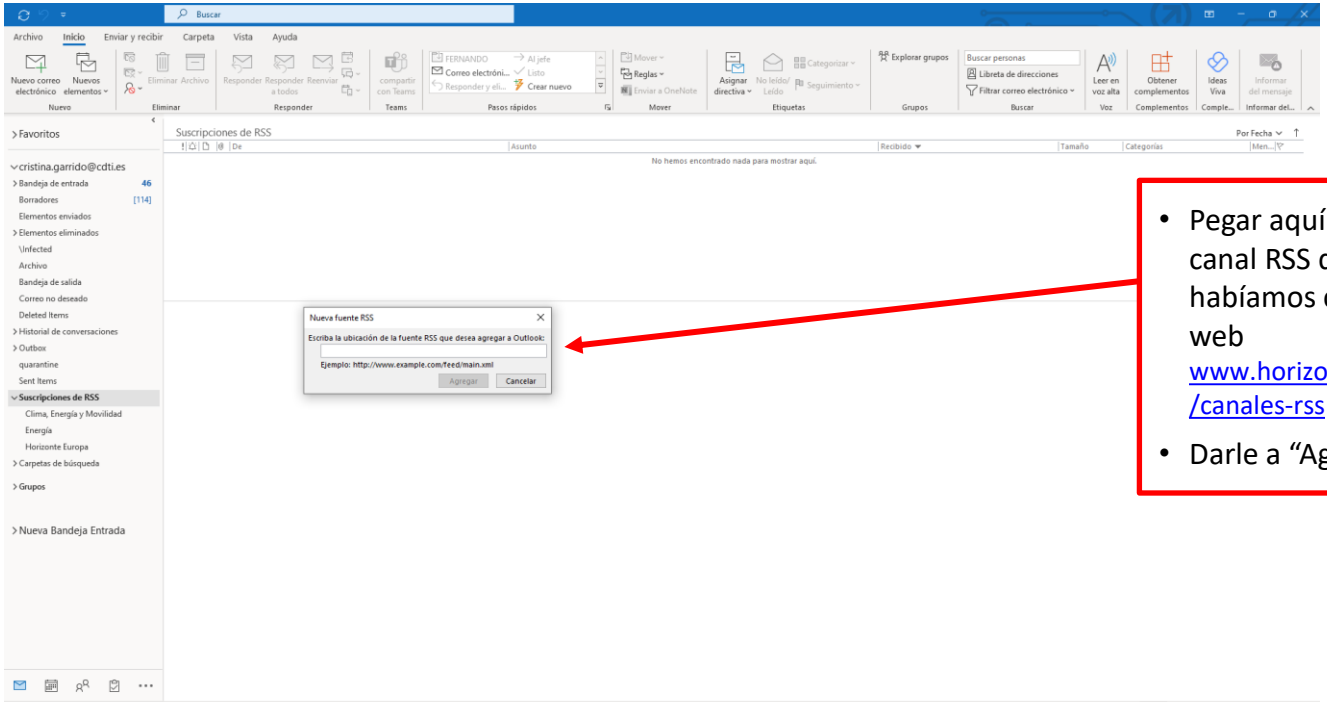
- Poner el ratón sobre el canal de tu interés
- Botón derecho y “copiar dirección de enlace”
- Ojo!: no pinchar en el canal, sino botón derecho y “copiar dirección de enlace”

Canales RSS en www.horizonteeuropa.es (3/6)



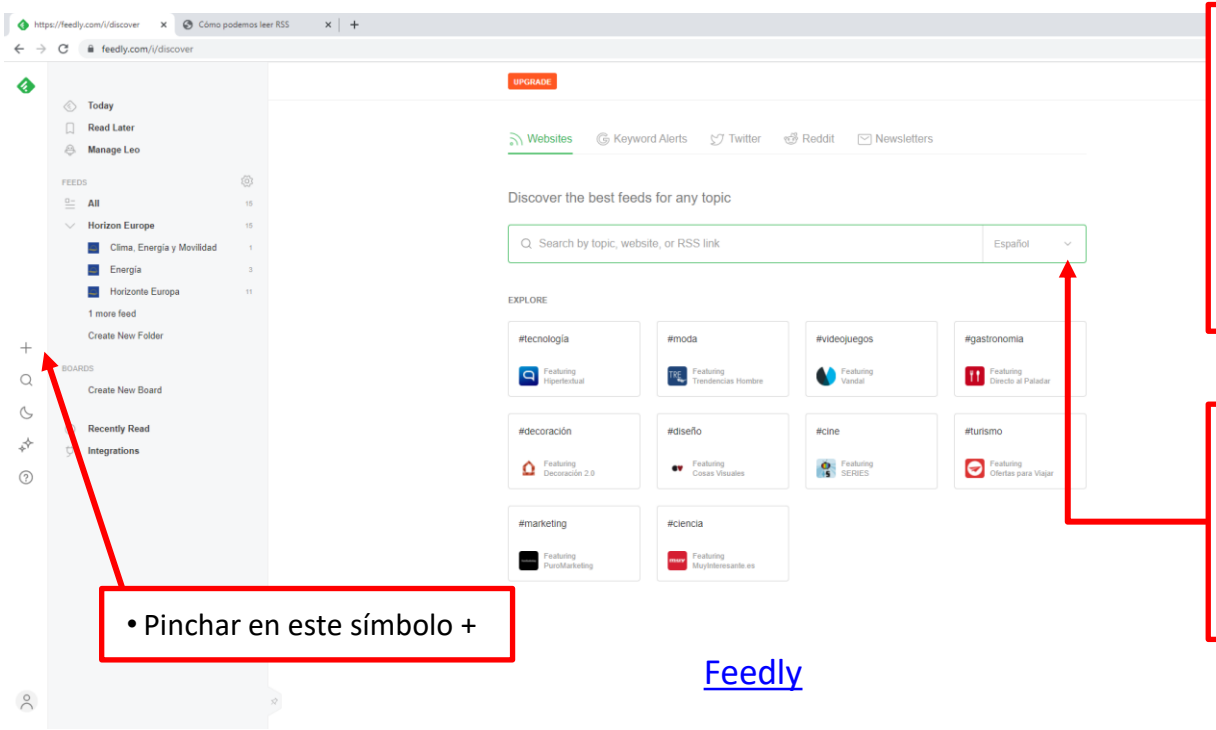
1. En Outlook, ir a “Suscripciones de RSS”
2. Botón derecho e ir a “Agregar una nueva fuente RSS”

Canales RSS en www.horizonteeuropa.es (4/6)



- Pegar aquí el enlace del canal RSS de Energía que habíamos copiado en la web www.horizonteeuropa.es/info/canales-rss
- Darle a “Agregar” y listo

Canales RSS en www.horizonteeuropa.es (5/6)



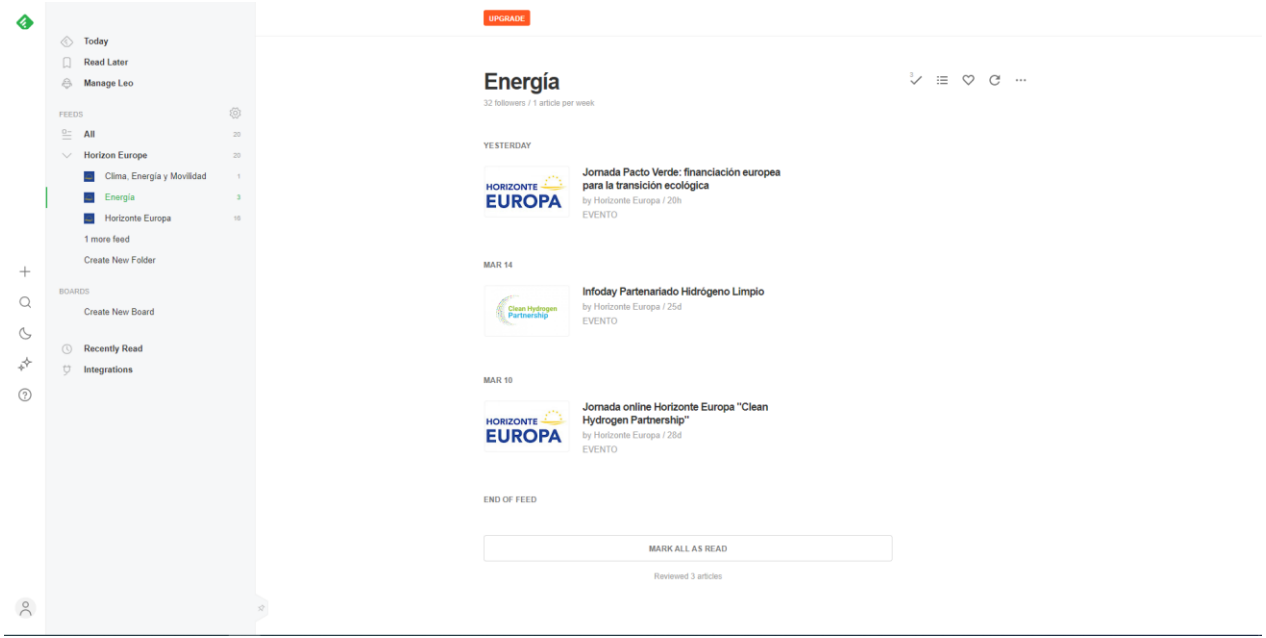
- Pinchar en este símbolo +

- Si no te funcionan las suscripciones de RSS de Outlook
- En Internet ir a un lector de noticias gratuito, por ejemplo **Feedly**

- Pegar aquí el enlace del canal RSS de Energía que habíamos copiado en la web www.horizonteeuropa.es/info/canales-rss

Feedly

Canales RSS en www.horizonteeuropa.es (6/6)



[Feedly]

Para cualquier consulta

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luisa.revilla@cdti.es

Cristina Garrido
cristina.garrido@cdti.es

Mantente informado a través del Portal español de Horizonte Europa

www.horizonteeuropa.es

Conclusiones

- Oportunidades => WP Clúster 5 + WP Clean Hydrogen Partnership + Partenariado DUT + Partenariado CET + WP Cities Mission
- Recursos valiosos => FAQs, Programme Guide, Online Manual, Guía “IT How to”
- Mantente informado => Canales RSS del Portal HorizonteEuropa y @HE_Energía_CDTI