MONITORAGGIO BANDI HORIZON EUROPE
CLUSTER 5: Climate, Energy and Mobility

I.

Name	**Smart and efficient ways to construct, maintain and decommission with zero emissions from transport infrastructure** **TOPIC ID: HORIZON-CL5-2022-D6-02-06**		
Opening date	28 April 2022		
Deadline date	**06 September 2022 17:00:00 Brussels time**		
Keywords	**Hydrogen**		
Budget	10.00 million	Expected EU contribution per project: 5.00 million	N. of projects expected to be funded: 2
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	Safe, Resilient Transport and Smart Mobility services for passengers and goods (HORIZON-CL5-2022-D6-02)		
Type of action	HORIZON-IA HORIZON Innovation Actions	Activities are expected to achieve at least TRL 7 by the end of the project.	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute to the following expected outcomes: • A holistic approach to lowering transport infrastructure environmental impact, which takes into account the whole life cycle of transport infrastructure; carbon-neutral construction, maintenance, operation and decommissioning of the infrastructure • Implementation of circular economy principles (for example, by fostering new solutions and systems that are easy to maintain, repair, update, adapt and replace and by maximising the re-use/recycle of infrastructure components) to reduce emissions and the environmental impact; 100% reutilisation of construction materials within or across transport modes. • Performance-based design models and manufacturing techniques (e.g. additive and subtractive manufacturing) with the objective to substantially reduce materials consumption in construction and maintenance activities. • Enhanced modular construction, maintenance and decommissioning interventions able to reduce life cycle cost (LCC) by at least 30%. • Optimisation of energy use and increased share of renewable energy for infrastructure management operations as a way leading to achieving energy neutrality • Novel governance, public procurement and data utilization models to decrease the emissions and carbon footprint of the whole life cycle of transport infrastructure by 20%		
Key Strategic Orientations (KSO)	This Destination contributes to the following Strategic Plan's Key Strategic Orientations (KSO):		

	C: Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems; **A**: Promoting an open strategic autonomy[['Open strategic autonomy' refers to the term 'strategic autonomy while preserving an open economy', as reflected in the conclusions of the European Council 1 – 2 October 2020.]] by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations.
Impact areas	It covers the following **impact areas:** • Industrial leadership in key and emerging technologies that work for people; • Smart and sustainable transport.
Link	Funding & tenders (europa.eu)

II.

Name	**Design for advanced and scalable manufacturing of electrolysers** **TOPIC ID: HORIZON-JTI-CLEANH2-2022-01-04**		
Opening date	31 March 2022		
Deadline date	**20 September 2022 17:00:00 Brussels time**		
Keywords	**Hydrogen**		
Budget	4.00 million	Expected EU contribution per project: 2.00 million	N. of projects expected to be funded: 2
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	HORIZON-JTI-CLEANH2-2022 (HORIZON-JTI-CLEANH2-2022-2)		
Type of action	HORIZON-JU-RIA HORIZON JU Research and Innovation Actions	Activities are expected to start at MRL 4 and achieve MRL 5 by the end of the project.	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute to all the following expected outcomes: • Improving efficiency by 2-4% LHV compared to the use of the present state of the art solutions; • Increase system reliability and significantly reduce manufacturing costs resulting in an overall lower CAPEX and reaching a projected levelised cost of hydrogen (LCOH) below 3 €/kg assuming 40 €/MWh and 4,000 full load hours operation@, after the scaling up of the foreseen manufacturing techniques; • Demonstrate the value of advanced manufacturing techniques to reduce manufacturing times enhancing printing or assembly tolerances versus the state of the art.		
Scope	The following items are in scope of this topic and should lead to cost reduction and cell/stack reliability improvement. Scalability should be considered for each of the research paths to be followed in the project. The project should consider the re-use and recycling of the electrolysers and their components at their end of life. Proposals should address at least 3 of the topics below:		

	• Alternatives and/or novel processes should be identified, allowing improved conduction coatings with impact on Platinum group metals (PGM) content. Catalysts should be reduced in water electrolysers, since they are both very expensive and CRMs; • Exploration of new surface coating technologies and advanced manufacturing processes (e.g., 3D printing) for more efficient mass production, which can allow higher current density and process efficiency; • Improvement of manufacturing throughput, feature control, and scale for electrolyser bipolar plates to be coupled with a reduction of the processing cost through cost-effective and mass production-friendly processing techniques, including forming, punching, cleaning, coating and other processes; • Reduction of the manufacturing steps and transportation costs required to fabricate porous transport layers/gas diffusion layers; • Improvement of the level of automation of the cell stacks assembly thanks to the development of robotics tooling and automated inspection; • Test and development of scalable predictive maintenance devices which can greatly reduce the O&M costs of the electrolyser stack; • Include process design to leverage the recyclability of the materials at the end of life and the utilisation of recycled materials in novel manufacturing on a circularity approach.
Link	Funding & tenders (europa.eu)

III.

Name	**Integration of multi-MW electrolysers in industrial applications** **TOPIC ID: HORIZON-JTI-CLEANH2-2022-01-08**		
Opening date	31 March 2022		
Deadline date	**20 September 2022 17:00:00 Brussels time**		
Keywords	**Hydrogen**		
Budget	18.00 million	Expected EU contribution per project: 18.00 million	N. of projects expected to be funded: 1
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	HORIZON-JTI-CLEANH2-2022 (HORIZON-JTI-CLEANH2-2022-2)		
Type of action	HORIZON-JU-IA HORIZON JU Innovation Actions	Activities are expected to start at TRL 6 and achieve TRL 8 by the end of the project.	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute but are not limited to the following expected outcomes: • Emphasise innovation aspects that demonstrate how electrolyser technology goes beyond the current state of the art, while ensuring replicability and wide commercial impact following the implementation of the project;		

	• Demonstrate reliable operation of large-scale electrolysis and the use of the produced hydrogen in an application valorising the renewable character of the produced hydrogen according to final user's requirements; • Gain operational experience, including safety and regulatory framework, of the contractual and hardware arrangements required to distribute and supply hydrogen to the specific industrial environment; • Perform techno-economic analysis of the performance of these systems showcasing the business case of the proposed solution; • Technically assess the operation of the electrolyser in the industrial environment regarding contractual and hardware arrangements and suggest best practices; • Evaluate the life cycle environmental performance of the system (including water usage) in alignment with the applicable regulation, defining renewable hydrogen with attention to the CO2 intensity of the hydrogen produced, which should include an understanding of the CO2 footprint impact in the addressed hydrogen end-user markets; • Identify the value and size of the markets addressed and the possibility of indirectly affecting additional relevant markets; • Assess the legislative and RCS implications of these systems and any issues identified in obtaining consents to operate the system; • Make recommendations for policy makers and regulators on measures helping to maximise the value of renewable energy and stimulate the market for renewables-electrolyser systems.
Scope	The scope of the project is to demonstrate the integration of a large-scale electrolyser of minimum 25 MW. Technical requirements in terms of purity and pressure shall be designed to fulfil the industrial requirements. At least 2 years of operation are expected. Hydrogen production should be >1,500 tonne/yr and the facility should be working more than 3,200 equivalent hours/yr at full load. Proposal should address innovation aspects that ensure the project goes beyond the state of the art. Examples of innovations could include, but are not limited to: • Possibly supply hydrogen to two separate users, each with their own operational requirements and managing electrolyser output both in terms of generation and storage in order to maximise the efficiency of the setup; • Use oxygen and/or waste heat from the electrolyser for other processes at the industrial site, or from the industrial process to the electrolyser in case of SOEL; • Concepts related to the circular economy (e.g.: water utilisation, re-use of CO2 at the site); • Provision of grid services that help the economics of the installation; • Footprint reduction, for example integrating hardware vertically instead of horizontally, or minimising the footprint of the electrolyser with a single balance of plant including all required utilities such as water purification, power rectification with appropriate grid interfaces and hydrogen purification, process cooling, etc;
Link	Funding & tenders (europa.eu)

IV.

Name	**Efficient system for dehydrogenation of liquid organic hydrogen carriers for application to long distance transportations** **TOPIC ID: HORIZON-JTI-CLEANH2-2022-02-05**		
Opening date	31 March 2022		
Deadline date	**20 September 2022 17:00:00 Brussels time**		
Keywords	**Hydrogen**		
Budget	3.00 million	Expected EU contribution per project: 3.00 million	N. of projects expected to be funded: 1
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	HORIZON-JTI-CLEANH2-2022 (HORIZON-JTI-CLEANH2-2022-2)		
Type of action	HORIZON-JU-RIA HORIZON JU Research and Innovation Actions	Activities are expected to start at TRL 3 and achieve TRL 5 by the end of the project.	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute to all of the following expected outcomes: • Contribute to Europe technology leadership, developing innovative reactors and catalyst for the dehydrogenation of LOHC, including integrated solutions for heat management and hydrogen purification; • Reducing the use of critical raw materials in LOHC dehydrogenation reaction; • Develop affordable business models related to the use of hydrogen carried on by LOHC for various applications, such as centralised and distributed power generation, shipping, heavy mobility, etc; • Contributing to the understanding of Europe need in terms of infrastructure and regulation for the management of liquid hydrogen carriers; • Foster the demonstration of the solutions developed in the project throughout Europe; • Contribute to the social acceptance of hydrogen technologies, demonstrating safe solutions for hydrogen transportation by LOHC.		
Scope	The project should develop and demonstrate reactors and catalyst dedicated to the dehydrogenation of LOHC. In particular, the project should contain a set of principles applied in catalyst and reactor design, which can bring significant benefits in terms of process intensification and chain efficiency, lower capital and operating expenses, higher quality of products, less wastes and improved process safety. Therefore, it is of interest to develop and demonstrate, at prototype scale, low-cost catalysts and integrated reactors that can deliver hydrogen at a high rate per volume from LOHC dehydrogenation at relatively low temperatures and high conversion, so that zero-carbon pure hydrogen can be transported at long distances. The proposal should contain: • Development of catalyst (CRMs free catalyst or reducing of CRM use should be considered) for the LOHC dehydrogenation at lower temperature compared to the state of the art: • ensuring the highest possible dehydrogenation reaction conversion (>95%);		

	• improving the overall thermal efficiency of the LOHC dehydrogenation step; • providing high reliability, ease of operation, and cost-effectiveness to hydrogen production; • an integrated system with high reliability, ease of operation, low materials degradation and cost-effectiveness to hydrogen production from LOHC. • A fully CO2-free dehydrogenation process; • A demonstration system, running for at least 500 hours and producing at least 10 kg H2/day at atmospheric pressure; • Demonstration of the absence of contaminants, by-products and degradation products from the dehydrogenation of LOHC in real conditions (hydrogen quality according to ISO 14687:2019); • Demonstration of scalability of the developed system to large-scale production (equivalent to the 100 t H2/day) for long distance transportation; • A Life Cycle Assessment of the developed system in the frame of the whole supply chain: LOHC inventory and make-up, (de)hydrogenation steps, temporary storage, shipping, CRM net consumption, etc; • Techno-economic analysis for the scalability of the developed system to large-scale production for long distance transportation, i.e. 1000 t H2/day, including centralised hydrogenation plant, storage, shipping and distributed dehydrogenation plants.
Link	Funding & tenders (europa.eu)

v.

Name	**Direct renewable energy integration into process energy demands of the chemical industry** **TOPIC ID: HORIZON-CL5-2022-D3-02-06**		
Opening date	26 May 2022		
Deadline date	**27 October 2022 17:00:00 Brussels time**		
Keywords	Renewable energy		
Budget	10.00 million	Expected EU contribution per project: 3-5 million	N. of projects expected to be funded: 2
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-02)		
Type of action	HORIZON-RIA HORIZON Research and Innovation Actions	Activities are expected to achieve TRL 4-5 by the end of the project	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute to some of the following expected outcomes: • Advance the European scientific basis, technological leadership and global role in the area of renewable integration into the chemical industry, while creating evidence for policy making; • Increase European technology competitiveness in renewable process energy technologies, thus supporting the EU goals for climate protection, energy independence and economic growth;		

	• Provide breakthrough solutions towards a fossil-free economy and ecosystem; • Allow high penetration in the energy system, ensure stability and security of energy supply, including integration of local resources, and gain efficiency and costs in transforming the energy system on a fossil-free basis; • Enable transformation of the energy supply to socio-economic and environmental fossil-free sustainable solutions across energy intensive chemical industry, targeting in particular process energy and its GHG emissions.
Key Strategic Orientations (KSO)	This Destination contributes to the following Strategic Plan's Key Strategic Orientations (KSO): **C**: Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems; **A**: Promoting an open strategic autonomy[['Open strategic autonomy' refers to the term 'strategic autonomy while preserving an open economy', as reflected in the conclusions of the European Council 1 – 2 October 2020.]] by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations;
Impact areas	It covers the following **impact areas**: • Industrial leadership in key and emerging technologies that work for people; • Affordable and clean energy.
Link	Funding & tenders (europa.eu)

VI.

Name	**Demonstration of complete value chains for advanced biofuel and non-biological renewable fuel production** **TOPIC ID: HORIZON-CL5-2022-D3-02-08**		
Opening date	26 May 2022		
Deadline date	**27 October 2022 17:00:00 Brussels time**		
Keywords	**Biofuel**, **Hydrogen**		
Budget	20 000 000 EUR	Expected EU contribution per project: Around 10 mln	N. of projects expected to be funded: 2
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-02)		
Type of action	HORIZON-IA HORIZON Innovation Actions	Activities are expected to achieve TRL 6-7 by the end of the project	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute to all of the following **expected outcomes**: • Build a portfolio of complete value chains for advanced biofuels and renewable fuels of non-biological origin. • De-risk technology, boost the scale-up of advanced biofuels and non-biological origin renewable fuels. • Contribute to the priorities of the SET Plan Action 8.		

	• Respond to short and medium term needs for renewable fuels in energy and transport. • Improve sustainability and security of the value chains.
Key Strategic Orientations (KSO)	This Destination contributes to the following Strategic Plan's Key Strategic Orientations (KSO): **C**: Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems; **A**: Promoting an open strategic autonomy[['Open strategic autonomy' refers to the term 'strategic autonomy while preserving an open economy', as reflected in the conclusions of the European Council 1 – 2 October 2020.]] by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations;
Impact areas	It covers the following **impact areas**: • Industrial leadership in key and emerging technologies that work for people; • Affordable and clean energy.
Link	Funding & tenders (europa.eu)

VII.

Name	**Renewable energy carriers from variable renewable electricity surplus and carbon emissions from energy consuming sectors** **TOPIC ID: HORIZON-CL5-2022-D3-02-05**		
Opening date	26 May 2022		
Deadline date	**27 October 2022 17:00:00 Brussels time**		
Keywords	Renewable energy		
Budget	20 000 000 EUR	Expected EU contribution per project: 10 mln	N. of projects expected to be funded: 2
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-02)		
Type of action	HORIZON-IA HORIZON Innovation Actions	Activities are expected to achieve TRL 7 by the end of the project	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute to some of the following **expected outcomes**: • Advance the European scientific basis and increase technology competitiveness in the area of energy carrier production and integration with renewable electricity and carbon value and supply chains; • Technology de-risk of renewable energy carrier value chains through demonstration as a necessary step before scaling up at commercial level; • Enhanced sustainability of renewable energy carrier value and supply chains by improving techno-economic efficiency and avoidance of CO2/GHG emissions and renewable electricity economic or curtailment losses and supported by a life cycle assessment.		

Key Strategic Orientations (KSO)	This Destination contributes to the following Strategic Plan's Key Strategic Orientations (KSO): **C**: Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems; **A**: Promoting an open strategic autonomy[['Open strategic autonomy' refers to the term 'strategic autonomy while preserving an open economy', as reflected in the conclusions of the European Council 1 – 2 October 2020.]] by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations;
Impact areas	It covers the following **impact areas**: • Industrial leadership in key and emerging technologies that work for people; • Affordable and clean energy.
Link	Funding & tenders (europa.eu)

VIII.

Name	**Digital solutions for defining synergies in international renewable energy value chains** **TOPIC ID: HORIZON-CL5-2022-D3-02-01**		
Opening date	26 May 2022		
Deadline date	**27 October 2022 17:00:00 Brussels time**		
Keywords	Renewable energy		
Budget	9 000 000 EUR	Expected EU contribution per project: 3 mln	N. of projects expected to be funded: 3
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-02)		
Type of action	HORIZON-RIA HORIZON Research and Innovation Actions	Activities are expected to achieve TRL 5 by the end of the project	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute to some of the following **expected outcomes**: • Advance the European and global scientific basis, European leadership and global role in the area of renewable energy and renewable fuels and related energy value chains while creating evidence for policy making by developing novel digital solutions. • Provide digital breakthrough solutions for promoting the increase of the global renewable energy share. • Reinforce the European scientific basis through international collaboration while increasing the potential to export European renewable energy technologies and ensuring political priorities in the context of sustainable global energy value chains. • Improve reliability of system components, advanced and automated functions for data analysis, diagnosis and fault detection, forecasting and model-		

	predictive control frameworks, ancillary services for the stability of the network; maintenance planning and/or reporting.
Key Strategic Orientations (KSO)	This Destination contributes to the following Strategic Plan's Key Strategic Orientations (KSO): **C**: Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems; **A**: Promoting an open strategic autonomy[['Open strategic autonomy' refers to the term 'strategic autonomy while preserving an open economy', as reflected in the conclusions of the European Council 1 – 2 October 2020.]] by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations;
Impact areas	It covers the following **impact areas**: • Industrial leadership in key and emerging technologies that work for people; • Affordable and clean energy.
Link	Funding & tenders (europa.eu)

IX.

Name	**Renewable energy incorporation in agriculture and forestry** **TOPIC ID: HORIZON-CL5-2022-D3-02-07**		
Opening date	26 May 2022		
Deadline date	**27 October 2022 17:00:00 Brussels time**		
Keywords	Renewable energy		
Budget	15 000 000 EUR	Expected EU contribution per project: around 7.5	N. of projects expected to be funded: 2
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-02)		
Type of action	HORIZON-IA HORIZON Innovation Actions	Activities are expected to achieve TRL 6-7 by the end of the project	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute to some of the following **expected outcomes**: • Promote decentralised renewable energy use and cost-efficient decentralized production of renewable energy carriers. • Reduce agriculture and forestry carbon footprint from own energy consumption and agricultural/forest waste management. • Increase sustainability and circularity in agriculture while creating positive effects on biodiversity. • Increase sustainability and circularity in forestry. • Foster regional development in rural areas. • Support farmers' and foresters' engagement as prosumers of renewable energy.		

Key Strategic Orientations (KSO)	This Destination contributes to the following Strategic Plan's Key Strategic Orientations (KSO): **C**: Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems; **A**: Promoting an open strategic autonomy[['Open strategic autonomy' refers to the term 'strategic autonomy while preserving an open economy', as reflected in the conclusions of the European Council 1 – 2 October 2020.]] by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations;
Impact areas	It covers the following **impact areas**: • Industrial leadership in key and emerging technologies that work for people; • Affordable and clean energy.
Link	Funding & tenders (europa.eu)

X.

Name	**Best international practice for scaling up sustainable biofuels** **TOPIC ID: HORIZON-CL5-2022-D3-03-02**		
Opening date	06 September 2022		
Deadline date	**10 January 2023 17:00:00 Brussels time**		
Keywords	**Biofuel**		
Budget	9 000 000 EUR	Expected EU contribution per project: Around 3 mln	N. of projects expected to be funded: 3
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-03)		
Type of action	HORIZON-RIA HORIZON Research and Innovation Actions	Activities are expected to achieve TRL 4-5 by the end of the project	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute to some of the following **expected outcomes**: • Build global knowledge for the scaling-up and the sustainability assessment of sustainable biofuels value chains. • Contribute to cost-effective and more sustainable large-scale production of sustainable biofuels. • Contribute to Mission Innovation Challenge n°4 Sustainable Biofuels[1]. • Contribute to the SET Plan Action 8 Bioenergy and Renewable Fuels for Sustainable Transport. • Accelerate capacity building for sustainable biofuels in the world. • Develop networks for skill development and knowledge sharing in sustainable biofuels value chains worldwide.		
Key Strategic Orientations (KSO)	This Destination contributes to the following Strategic Plan's Key Strategic Orientations (KSO):		

	C: Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems; **A**: Promoting an open strategic autonomy[['Open strategic autonomy' refers to the term 'strategic autonomy while preserving an open economy', as reflected in the conclusions of the European Council 1 – 2 October 2020.]] by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations;
Impact areas	It covers the following **impact areas**: • Industrial leadership in key and emerging technologies that work for people; • Affordable and clean energy.
Link	Funding & tenders (europa.eu)

XI.

Name	**Development of algal and renewable fuels of non-biological origin** **TOPIC ID: HORIZON-CL5-2022-D3-03-07**		
Opening date	06 September 2022		
Deadline date	**10 January 2023 17:00:00 Brussels time**		
Keywords	**Biofuel**		
Budget	15 000 000 EUR	Expected EU contribution per project: 5mln	N. of projects expected to be funded: 3
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-03)		
Type of action	HORIZON-RIA HORIZON Research and Innovation Actions	Activities are expected to achieve TRL 4-5 by the end of the project	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute to some of the following **expected outcomes**: • Increase feedstock and technology basis for renewable fuels. • Facilitate development of advanced and high-quality biofuels from algae vegetable lipids. • Foster development of technological pathways for algal and non-biological renewable fuel production. • Increase robustness of conversion and process sustainability for algal and non-biological renewable fuels. • Contribute to the priorities of the SET Plan Action 8. • Deliver technology for longer-term needs for renewable fuels in energy and transport.		
Key Strategic Orientations (KSO)	This Destination contributes to the following Strategic Plan's Key Strategic Orientations (KSO):		

	C: Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems; **A**: Promoting an open strategic autonomy[['Open strategic autonomy' refers to the term 'strategic autonomy while preserving an open economy', as reflected in the conclusions of the European Council 1 – 2 October 2020.]] by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations;
Impact areas	It covers the following **impact areas**: • Industrial leadership in key and emerging technologies that work for people; • Affordable and clean energy.
Link	Funding & tenders (europa.eu)

XII.

Name	**Efficient and low-emission technologies for industrial use of combustion and gasification systems from low-value biogenic residues and wastes TOPIC ID: HORIZON-CL5-2022-D3-03-06**		
Opening date	06 September 2022		
Deadline date	**10 January 2023 17:00:00 Brussels time**		
Keywords	**Biogenic**		
Budget	10 000 000 EUR	Expected EU contribution per project: 3 to 5 mln	N. of projects expected to be funded: 2
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-03)		
Type of action	HORIZON-RIA HORIZON Research and Innovation Actions	Activities are expected to achieve TRL 5 by the end of the project	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute to some of the following **expected outcomes**: • Advance the European scientific basis, technology base, leadership and global role in the area of bioenergy integration into industrial settings while creating evidence for policy making; • Increased feedstock diversification and better technological performance leading to cost-reduction of bioenergy with positive effects on renewables' penetration, circularity and security of supply; • Reduced emissions and increased environmental and socio-economic sustainability of biomass combustion and gasification and bioenergy value chains.		
Key Strategic Orientations (KSO)	This Destination contributes to the following Strategic Plan's Key Strategic Orientations (KSO): **C**: Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems;		

	A: Promoting an open strategic autonomy[['Open strategic autonomy' refers to the term 'strategic autonomy while preserving an open economy', as reflected in the conclusions of the European Council 1 – 2 October 2020.]] by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations;
Impact areas	It covers the following **impact areas**: • Industrial leadership in key and emerging technologies that work for people; • Affordable and clean energy.
Link	Funding & tenders (europa.eu)

XIII.

Name	**Innovative components and/or sub-systems for CSP plants and/or concentrating solar thermal installations** **TOPIC ID: HORIZON-CL5-2022-D3-03-01**		
Opening date	06 September 2022		
Deadline date	**10 January 2023 17:00:00 Brussels time**		
Keywords	**Concentrated solar power**		
Budget	16.50 million	Expected EU contribution per project: 5.50 million	N. of projects expected to be funded: 3
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-03)		
Type of action	HORIZON-IA HORIZON Innovation Actions	Activities are expected to achieve TRL 6-7 by the end of the project	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Concentrating solar thermal technologies supply renewable, dispatchable energy and can therefore be an important element of the evolving energy system. Project results are expected to contribute to some of the following expected outcomes: • Higher shares of variable output renewables in the energy system. • Higher efficiency of concentrated solar power (CSP) plants and/or concentrating solar thermal installations. • Reduced operation and maintenance costs of CSP plants and/or concentrating solar thermal installations. • Achievement of the targets of the SET Plan Initiative for Global Leadership in CSP.		
Key Strategic Orientations (KSO)	This Destination contributes to the following Strategic Plan's Key Strategic Orientations (KSO): **C**: Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems; **A**: Promoting an open strategic autonomy[['Open strategic autonomy' refers to the term 'strategic autonomy while preserving an open economy', as reflected in the conclusions of the European Council 1 – 2 October 2020.]] by leading the development of key digital, enabling and emerging technologies, sectors and value chains to		

	accelerate and steer the digital and green transitions through human-centred technologies and innovations;
Impact areas	It covers the following **impact areas**: • Industrial leadership in key and emerging technologies that work for people; • Affordable and clean energy.
Link	Funding & tenders (europa.eu)

XIV.

Name	**Efficient and low-emission technologies for industrial use of combustion and gasification systems from low-value biogenic residues and wastes TOPIC ID: HORIZON-CL5-2022-D3-03-06**		
Opening date	06 September 2022		
Deadline date	**10 January 2023 17:00:00 Brussels time**		
Keywords	**Biogenic**		
Budget	10 000 000 EUR	Expected EU contribution per project: 3 to 5 mln	N. of projects expected to be funded: 2
Programme	Horizon Europe Framework Programme (HORIZON)		
Call	Sustainable, secure and competitive energy supply (HORIZON-CL5-2022-D3-03)		
Type of action	HORIZON-RIA HORIZON Research and Innovation Actions	Activities are expected to achieve TRL 5 by the end of the project	
Type of MGA	HORIZON Action Grant Budget-Based [HORIZON-AG]		
Dealdline model	single-stage		
Expected outcomes	Project results are expected to contribute to some of the following **expected outcomes**: • Advance the European scientific basis, technology base, leadership and global role in the area of bioenergy integration into industrial settings while creating evidence for policy making; • Increased feedstock diversification and better technological performance leading to cost-reduction of bioenergy with positive effects on renewables' penetration, circularity and security of supply; • Reduced emissions and increased environmental and socio-economic sustainability of biomass combustion and gasification and bioenergy value chains.		
Key Strategic Orientations (KSO)	This Destination contributes to the following Strategic Plan's Key Strategic Orientations (KSO): **C**: Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems; **A**: Promoting an open strategic autonomy[['Open strategic autonomy' refers to the term 'strategic autonomy while preserving an open economy', as reflected in the conclusions of the European Council 1 – 2 October 2020.]] by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations;		
Impact areas	It covers the following **impact areas**:		

	• Industrial leadership in key and emerging technologies that work for people; • Affordable and clean energy.
Link	Funding & tenders (europa.eu)