



CGREEN
GREEN CHEMISTRY
AND ADVANCED MATERIALS

Ciclo di webinar

DIREZIONE: HORIZON EUROPE

Le call in uscita di Horizon Europe

Marco Monti

CGREEN - PROPLAST

SOGGETTI AGGREGATI IN ATS



proplast
PLASTICS INNOVATION POLE



Il Sistema dei Poli di Innovazione del Piemonte è
co-finanziato dal Fondo Europeo Sviluppo Regionale

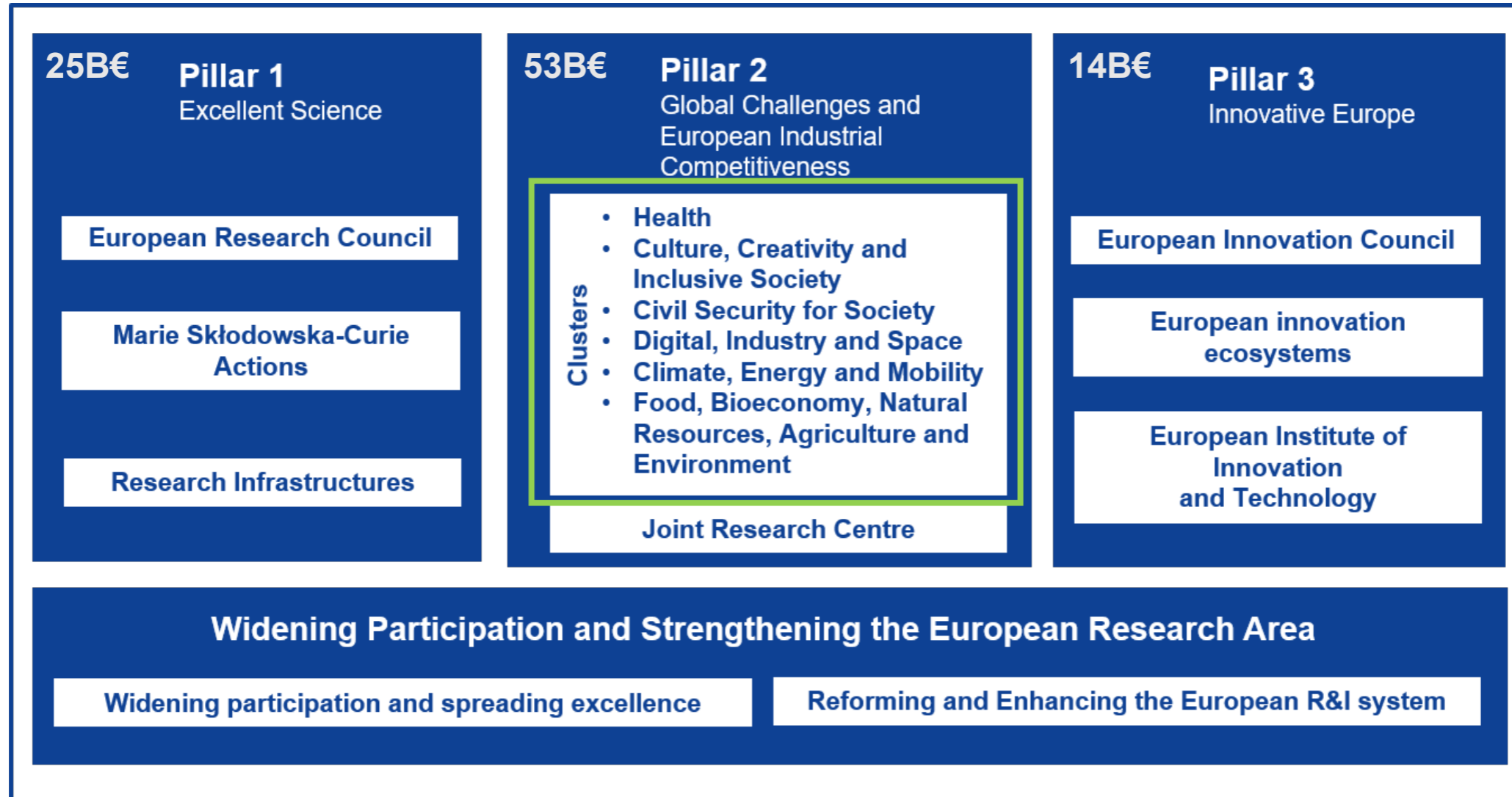


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LA STRUTTURA DI HE



1. Health
2. Culture, Creativity and Inclusive Society
3. Civil Security for Society
4. Digital, Industry and Space
5. Climate, Energy and Mobility
6. Food, Bioeconomy, Natural Resources, Agriculture and Environment

CLUSTER 4

	Cluster	Call ID	Call Title
CORE TOPICS	CL4	HORIZON-CL4-2021-TWIN-TRANSITION-01-05	Manufacturing technologies for bio-based materials (RIA)
	CL4	HORIZON-CL4-2021-TWIN-TRANSITION-01-17	Plastic waste as a circular carbon feedstock for industry (IA)
	CL4	HORIZON-CL4-2021-RESILIENCE-01-01	Ensuring circularity of composite materials (RIA)
	CL4	HORIZON-CL4-2021-RESILIENCE-01-10	Paving the way to an increased share of recycled plastics in added value products (RIA)
	CL4	HORIZON-CL4-2021-RESILIENCE-01-11	Safe- and sustainable-by-design polymeric materials (RIA)
SIDE TOPICS	CL4	HORIZON-CL4-2021-TWIN-TRANSITION-01-03	Laser-based technologies for green manufacturing (RIA)
	CL4	HORIZON-CL4-2021-TWIN-TRANSITION-01-14	Deploying industrial-urban symbiosis solutions for the utilization of energy, water, industrial waste and by-products at regional scale (RIA)
	CL4	HORIZON-CL4-2021-RESILIENCE-01-20	Antimicrobial, Antiviral, and Antifungal Nanocoatings (RIA)
	CL4	HORIZON-CL4-2021-RESILIENCE-01-04	Developing climate-neutral and circular raw materials (IA)
	CL4	HORIZON-CL4-2022-RESILIENCE-01-05	Technological solutions for tracking raw material flows in complex supply chains (RIA)
	CL4	HORIZON-CL4-2021-RESILIENCE-01-03	Identifying future availability of secondary raw materials (RIA)
	CL4	HORIZON-CL4-2022-RESILIENCE-01-11	Advanced lightweight materials for energy efficient structures (RIA)
	CL4	HORIZON-CL4-2022-RESILIENCE-01-12	Functional multi-material components and structures (RIA)
	CL4	HORIZON-CL4-2022-RESILIENCE-01-13	Smart and multifunctional biomaterials for health innovations (RIA)
	CL4	HORIZON-CL4-2022-RESILIENCE-01-14	Membranes for gas separations - membrane distillation (IA)
	CL4	HORIZON-CL4-2022-RESILIENCE-01-19	Advanced materials modelling and characterisation (RIA)
	CL4	HORIZON-CL4-2022-DIGITAL-EMERGING-01-20	2D-material-based composites , coatings and foams (IA)
	CL4	HORIZON-CL4-2021-RESILIENCE-01-17	Advanced materials for hydrogen storage (RIA)
	CL4	HORIZON-CL4-2021-DIGITAL-EMERGING-01-31	Functional electronics for green and circular economy (RIA)
TRASVER SALI	CL4	HORIZON-CL4-2021-TWIN-TRANSITION-01-07	Artificial Intelligence for sustainable, agile manufacturing (IA)
	CL4	HORIZON-CL4-2022-TWIN-TRANSITION-01-06	ICT Innovation for Manufacturing Sustainability in SMEs (I4MS2) (IA)
	CL4	HORIZON-CL4-2022-TWIN-TRANSITION-01-07	Digital tools to support the engineering of a Circular Economy (RIA)
	CL4	HORIZON-CL4-2021-TWIN-TRANSITION-01-21	Design and optimisation of energy flexible industrial processes (IA)
	CL4	HORIZON-CL4-2021-TWIN-TRANSITION-01-02	Zero-defect manufacturing towards zero-waste (IA)

CLUSTER 5

Cluster	Call ID	Call Title
CL5	HORIZON-CL5-2021-D2-01-01	Sustainable processing, refining and recycling of raw materials (Batteries Partnership)
CL5	HORIZON-CL5-2021-D2-01-06	Sustainable, safe and efficient recycling processes (Batteries Partnership)
CL5	HORIZON-CL5-2021-D3-02-09	Carbon-negative sustainable biofuel production
CL5	HORIZON-CL5-2021-D3-02-16	Innovative biomethane production as an energy carrier and a fuel
CL5	HORIZON-CL5-2022-D3-01-01	Demonstration of cost-effective advanced biofuel technologies utilizing existing industrial plants
CL5	HORIZON-CL5-2022-D3-01-02	Demonstration of innovative materials, supply cycles, recycling technologies to increase the overall circularity of wind energy technology and to reduce the primary use of critical raw materials
CL5	HORIZON-CL5-2021-D5-01-01	Nextgen vehicles: Innovative zero emission BEV architectures for regional medium freight haulage (2ZERO)
CL5	HORIZON-CL5-2021-D5-01-02	Nextgen EV components : Integration of advanced power electronics and associated controls (2ZERO)
CL5	HORIZON-CL5-2021-D6-01-10	Testing safe lightweight vehicles and improved safe human-technology interaction in the future traffic system

CLUSTER 6



	Cluster	Call ID	Call Title
CORE TOPICS	CL6	HORIZON-CL6-2021-CIRCBIO-01-03	Innovative solutions to over-packaging and single-use plastics , and related microplastic pollution (IA)
	CL6	HORIZON-CL6-2021-CIRCBIO-01-04	Increasing the circularity in textiles, plastics and/or electronics value chains (IA)
	CL6	HORIZON-CL6-2021-CIRCBIO-01-05	Novel, non-plant biomass feedstocks for industrial applications (IA)
	CL6	HORIZON-CL6-2022-CIRCBIO-02-03-two-stage	Sustainable biodegradable novel bio-based plastics : innovation for sustainability and end-of-life options of plastics
	CL6	HORIZON-CL6-2021-ZEROPOLLUTION-01-06	Increasing the environmental performance of industrial processes in bio-based sectors: construction, woodworking, textiles, pulp and paper and bio-chemicals
SIDE TOPICS	CL6	HORIZON-CL6-2021-CIRCBIO-01-01	Circular Cities and Regions Initiative (CCRI)'s circular systemic solutions (IA)
	CL6	HORIZON-CL6-2022-CIRCBIO-01-03	Benefits of the transition towards sustainable circular bio-based systems from linear fossil-based (CSA)
	CL6	HORIZON-CL6-2021-GOVERNANCE-01-11	Education on the bioeconomy including bio-based sectors for young people in primary and secondary education in Europe

CL4-2021-TWIN-TRANSITION-01-05

Call title	<i>Manufacturing technologies for bio-based materials</i>	Deadline 23 Settembre 2021
Call ID	HORIZON-CL4-2021-TWIN-TRANSITION-01-05	
Type of action	RIA	
Technology Readiness Level	da 4 a 6	
Expected EU contribution per project	4-6 million €	
Number of funded proposal	4	
Expected Outcome	<ul style="list-style-type: none">• Demonstrate relevant scale production of innovative bio-based products to substitute traditional materials with high environmental footprint;• Develop products with similar or better mechanical, physical and chemical properties, while having a substantially lower environmental footprint and being sustainable, non-toxic and recyclable when compared to non-bio-based materials;• Demonstrate disruptive innovation of bio-based materials production in at least three different manufacturing value chains;• Develop sustainable business models for materials sourcing and recycling.	
Scope	<p>Industrial sectors: construction, food, medical, packaging and textile industries</p> <ul style="list-style-type: none">• Optimisation and improvement of smart manufacturing processes, e.g. additive manufacturing, injection moulding, extrusion etc..;• Use of carbon positive bio-based materials, such as composite, rubber, plastics, in different products to achieve high technical properties while lowering the environmental footprint;• Combine the use of different bio-based materials to facilitate refurbishing and re-manufacturing of products to achieve circularity by design• Adapt existing or new characterisation methods and quality controls for the bio-based materials;• Support the creation of a skilled workforce, through training/qualification of personnel;• Address standardization activities of bio-based materials and adapted characterisation methods and quality controls	

CL4-2021-RESILIENCE-01-10

Call title	<i>Paving the way to an increased share of recycled plastics in added value products (RIA)</i>
Call ID	HORIZON-CL4-2021-RESILIENCE-01-10
Type of action	RIA
Technology Readiness Level	da 3 a 6
Expected EU contribution per project	5-7 million €
Number of funded proposal	4
Expected Outcome	<ul style="list-style-type: none">• Establish EU broadly accepted definition of recyclate and develop relevant verification methods for recycled content in products.• Establish EU broadly accepted procedures to control the consistent quality of recyclates; characterise their suitability for specific applications and trace the recyclates back to their origin;• Deliver a clear approach to prevent some potentially hazardous substances to enter the recycled plastics system;• Enhancing ownership and engagement of the society through active collaboration and empowering people and communities as actors of the circular plastic transition.• At medium term, to fulfil the growing demand for recycled plastic content in market products;• At a longer term, to pave the way toward recyclable-by-design plastics.
Scope	<p>The proposals should address one or more of the following areas:</p> <ul style="list-style-type: none">• Developing standard, robust and easy to use sampling and analysis procedures to ensure consistent recyclate quality and safe products. Develop methodologies to establish the degree of degradation of recycled materials and to foresee their end-of-life;• Developing and standardising methods for traceability. Allow the identification of origin of recycled materials via digital information management, e.g. marking technologies or blockchain;• Detect and separate legacy additive in the waste stream, and ensure safe recycling of plastics containing such additives;• Diffusing innovation, developing overarching best practices and build up communities to stimulate demonstration.

Deadline
23 Settembre 2021

Call title	<i>Safe- and sustainable-by-design polymeric materials (RIA)</i>	<div style="background-color: #f4a460; padding: 5px; text-align: center;"> Deadline 23 Settembre 2021 </div>
Call ID	HORIZON-CL4-2021-RESILIENCE-01-11	
Type of action	RIA	
Technology Readiness Level	da 3 a 5	
Expected EU contribution per project	4-5 million €	
Number of funded proposal	4	
Expected Outcome	<ul style="list-style-type: none"> • Recyclable-by-design polymers with inherent recyclability properties for polymers where nowadays recyclability challenge is high; • Safer (lower toxicity) plastics, with less reliance on potentially harmful additives; • Reduced environmental footprint associated with the end-of-life phase of the polymers due to increased recyclability and /or reduced reliance on potentially harmful additives, compared with existing products for similar applications; • Contribute to the development of safe- and sustainable-by-design criteria and guiding principles and apply them to polymers; • Identification of priorities for substitution of plastic additives; • New technologies and business opportunities for recycling industry across EU. 	
Scope	<ul style="list-style-type: none"> • The design and development of new recyclable polymer systems substituting/improving nowadays difficult to recycle polymers e.g. PVC, thermosets or multicomponent (multilayer or blend) polymers; • The design and development of safer plastics with less reliance on potentially harmful additives, e.g. plasticizers. • Carrying out an inventory of additives detected in plastics and their function and toxicity; • Integration of safe- and sustainable-by-design aspects, including safety (toxicity), circularity and functionality of advanced polymeric materials, products and processes throughout their lifecycle. 	

CL4-2021-TWIN-TRANSITION-01-07

Call title	<i>Artificial Intelligence for sustainable, agile manufacturing (IA)</i>	Deadline 23 Settembre 2021
Call ID	HORIZON-CL4-2021-TWIN-TRANSITION-01-07	
Type of action	IA	
Technology Readiness Level	da 4 a 7	
Expected EU contribution per project	4-6 million €	
Number of funded proposal	3	
Expected Outcome	<ul style="list-style-type: none">• Establishing European industry as leader in sustainable manufacturing and process industries through the application of trustworthy AI technologies;• Improving the environmental sustainability of industrial production;• Improving the agility of European industry and its resiliency to external and internal influences;• Integrating state-of-the-art AI technologies with advanced circular manufacturing and re-manufacturing technologies and systems, exploiting their potential across the entire product and service lifecycle;	
Scope	<ul style="list-style-type: none">• This topic focuses on manufacturing and process industries, addressing the entire lifecycle of products and services from design to remanufacturing and including all the aspects primarily relevant for industrial production.• The objective is to exploit the potential of AI as a transformation tool to support circular production in the entire manufacturing and process industry, with due consideration for standardisation activities when relevant.• AI will be a strategic instrument to improve sustainability, agility and resilience to external and internal influences, taking account of the European Green Deal objectives.• Projects have to address the need for AI tool sets with simplified interfaces requiring only easy to acquire skills, and adapted to manufacturing environments without highly skilled personnel.• The topic will integrate new or existing technologies to make them practically and economically viable in the industrial world; this should be demonstrated through at least two realistic use cases with demonstrable economic return.	

CL4-2021-TWIN-TRANSITION-01-07

Call title	<i>Artificial Intelligence for sustainable, agile manufacturing (IA)</i>	Deadline 23 Settembre 2021
Call ID	HORIZON-CL4-2021-TWIN-TRANSITION-01-07	
Type of action	IA	
Technology Readiness Level	da 4 a 7	
Expected EU contribution per project	4-6 million €	
Number of funded proposal	3	
Expected Outcome	<ul style="list-style-type: none">• Establishing European industry as leader in sustainable manufacturing and process industries through the application of trustworthy AI technologies;• Improving the environmental sustainability of industrial production;• Improving the agility of European industry and its resiliency to external and internal influences;• Integrating state-of-the-art AI technologies with advanced circular manufacturing and re-manufacturing technologies and systems, exploiting their potential across the entire product and service lifecycle;	
Scope	<ul style="list-style-type: none">• This topic focuses on manufacturing and process industries, addressing the entire lifecycle of products and services from design to remanufacturing and including all the aspects primarily relevant for industrial production.• The objective is to exploit the potential of AI as a transformation tool to support circular production in the entire manufacturing and process industry, with due consideration for standardisation activities when relevant.• AI will be a strategic instrument to improve sustainability, agility and resilience to external and internal influences, taking account of the European Green Deal objectives.• Projects have to address the need for AI tool sets with simplified interfaces requiring only easy to acquire skills, and adapted to manufacturing environments without highly skilled personnel.• The topic will integrate new or existing technologies to make them practically and economically viable in the industrial world; this should be demonstrated through at least two realistic use cases with demonstrable economic return.	

Call title	<i>Ensuring circularity of composite materials</i>	Deadline 23 Settembre 2021
Call ID	HORIZON-CL4-2021-RESILIENCE-01-01	
Type of action	RIA	
Technology Readiness Level	Da 3 a 6	
Expected EU contribution per project	8-9 million €	
Number of funded proposal	3	
Expected Outcome	<ul style="list-style-type: none"> • Reuse of composite material and recovery of secondary raw materials with higher value than currently available; • Reduction of waste sent to landfill and positive environmental impact; • Creation of new value streams through new technologies with potential for commercial exploitation; new business opportunities and revenue flows for recycling companies, benefiting particularly SMEs which dominate this sector of the market; • Increased uptake of novel composites materials in industrial applications e.g. enhanced lightweight designs for transport. 	
Scope	<ul style="list-style-type: none"> • propose innovative dismantling and sorting systems enabling reuse and functional recycling of complex composite materials; • develop and integrate novel solutions for a higher reuse of products and components; • develop novel, safe, environment friendly and commercially attractive methods of recycling a wide range of composite materials and reuse of secondary raw materials; • demonstrate at pilot level the feasibility of reuse and/or recycle approaches of composites and its secondary raw materials, for specific applications; • develop tools that will enable to demonstrate the circularity and the environmental benefits of the solutions tested; • consider the co-design of learning resources together with local and regional educational organisations for current and future generations of employees 	

Call title	<i>Safe- and sustainable-by-design polymeric materials</i>	Deadline 23 Settembre 2021
Call ID	HORIZON-CL4-2021-RESILIENCE-01-11	
Type of action	RIA	
Technology Readiness Level	Da 3 a 5	
Expected EU contribution per project	4-5 million €	
Number of funded proposal	4	
Expected Outcome	<ul style="list-style-type: none"> • Recyclable-by-design polymers with inherent recyclability properties for polymers where nowadays recyclability challenge is high; • Safer (lower toxicity) plastics, with less reliance on potentially harmful additives; • Reduced environmental footprint associated with the end-of-life phase of the polymers due to increased recyclability and /or reduced reliance on potentially harmful additives, compared with existing products for similar applications; • Contribute to the development of safe- and sustainable-by-design criteria and guiding principles and apply them to polymers; • Identification of priorities for substitution of plastic additives; • New technologies and business opportunities for recycling industry across EU. 	
Scope	<ul style="list-style-type: none"> • The design and development of new recyclable polymer systems substituting/improving nowadays difficult to recycle polymers e.g. PVC, thermosets or multicomponent (multilayer or blend) polymers; • The design and development of safer plastics with less reliance on potentially harmful additives, e.g. plasticizers; • Carrying out an inventory of additives detected in plastics and their function and toxicity; • Integration of safe- and sustainable-by-design aspects, including safety (toxicity), circularity and functionality of advanced polymeric materials, products and processes throughout their lifecycle. 	

Call title	<i>Innovative solutions to over-packaging and single-use plastics, and related microplastic pollution</i>
Call ID	HORIZON-CL6-2021-CIRCBIO-01-03
Type of action	IA
Technology Readiness Level	6-8 alla fine del progetto
Expected EU contribution per project	5-7 million €
Number of funded proposal	3
Expected Outcome	<p>At least <u>three</u> of the following outcomes</p> <ul style="list-style-type: none"> • Increased deployment and market uptake of innovative solutions, through better design, alternative materials, business models promoting reuse, deposit systems, smart labelling in support of and complying with the current relevant legal framework and, when scope would cover the food chain, the future EU framework for sustainability labelling, etc. • Increased reuse, recyclability and upcycling of packaging and single-use plastics • Significant reduction in over-packaging and single-use plastics in consumer goods, food packaging and humanitarian relief items • Significant reduction in packaging waste and single-use plastic waste • Significant reduction in management costs for the respective waste streams • Significant reduction in the release of microplastics from packaging and single-use plastics into the environment
Scope	<p>In line with the EU strategy for plastics in a circular economy and the Single Use Plastics (SUP) Directive, and in line with the priorities on plastics and packaging in the Circular Economy Action Plan CEAP, projects should combine <u>at least three of the following elements</u>:</p> <ul style="list-style-type: none"> • a reduction of (over)packaging and packaging waste, • design for reuse and recyclability of packaging, • a reduction of material complexity including the number of materials used (including diverse polymers), • the restriction of intentionally added microplastics, increasing the uptake of alternatives decreasing the dependency on fossil fuels and the related pollution, • measures to prevent the release of microplastics at all relevant stages of the product life cycle.

Deadline
6 Ottobre 2021

CL6-2022-CIRCBIO-02-03-two-stage

Call title	<i>Sustainable biodegradable novel bio-based plastics: innovation for sustainability and end-of-life options of plastics</i>	
Call ID	HORIZON-CL6-2022-CIRCBIO-02-03-two-stage	Deadline phase1. 15 Febbraio 2022 phase2. 1 Settembre 2022
Type of action	IA	
Technology Readiness Level	7-8 alla fine del progetto	
Expected EU contribution per project	6 million €	
Number of funded proposal	2	
Expected Outcome	Bio-based plastics value chains being deployed with improved functionalities and environmental performances, less toxicity substances, lower waste production and better product safety control along the whole value chain.	
Scope	<ul style="list-style-type: none">• Develop novel sustainable bio-based circular biodegradable plastics with enhanced functionalities, circularity and environmental sustainability. The bio-based plastic should be mechanically recyclable and its biodegradability in specific environments should allow for a more sustainably managed end-of-life such as either composting or anaerobic digestion or home composting or in 'in-situ' degradation (i.e. natural soil and marine environments) depending on applications and conditions.• Develop and optimise innovative aspects of the production process, for example green chemistry and/or fermentative production, especially with respect to catalysts, higher yield, bio-based plastic quality, while ensuring the sustainability of biological feedstock used in the manufacturing.• Test the biodegradability in the specific environment, i.e. either composting plant or anaerobic digester, or home composting, or in 'in-situ' degradation (i.e. natural soil and marine environments);• Consider process and product safety (i.e. production through to the use of a product) in value chains, especially for new products and materials, following national or EU regulations. The toxicological evaluation of products and the EU regulatory requirements for product safety should be systematically addressed (e.g. food contact materials).• Demonstrate the scaled-up production processes and cost competitiveness for novel sustainable bio-based biodegradable plastics.	

GRAZIE PER L'ATTENZIONE!



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