Klaszter 6. körforgásos gazdaság témájú nyitott Horizont Európa pályázati felhívások

Körforgásos gazdaság témájú felhívások -2023. őszén megnyílt felhívások áttekintése

Időpont és helyszín: 2023. december 1. péntek 10:00-11:00 online



Szemere Dorottya, NCP 6. Klaszter: Élelmiszer, biomassza alapú gazdaság, természeti erőforrások, mezőgazdaság és környezet e-mail: <u>dorottya.szemere@nkfih.gov.hu</u> HorizontPéntek10 webinársorozat

minden pénteken 10-11 között az NKFIH Horizont Európa NCP csapat szervezésében



Nemzeti Kutatási, Fejlesztési És Innovációs Hivatal



NCP Hungary - Horizon Europe

A Nemzetközi Főosztály legfontosabb feladatai



Horizont Európa Nemzeti Kapcsolattartó Pont Hálózat

Magyar Kutatásmenedzsment Közösség működtetése



Bilaterális TéT-kapcsolatok menedzselése

Partnerségek, ERA-NET konstrukciók



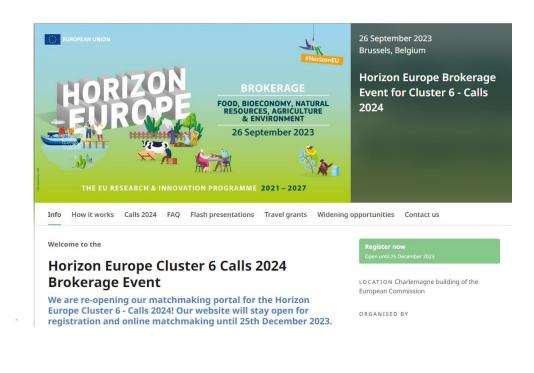
Horizont Európa Programbizottsági tagság

Svájci – Magyar Együttműködési Alap

...és még sokan mások

Partnerkeresés, konzorciumépítés

- Matchmaking platform
- Funding and Tenders Portal
- Heti hírlevél (magyar)
- NCP-ken keresztül (angol)





Circular Cities and Regions Initiative's project development assistance (CCRI-PDA)

Coordination and Support Action | TRL - | 2M EUR/project | 3 to be funded | Opening: 17 Oct 2023 | Deadline: 22 Feb 2024 Link to the topic: <u>click here</u>

The CCRI-PDA service targets public and private project promoters such as local and regional authorities or their groupings, public/private infrastructure operators and bodies, utilities and services, industry (including SMEs). The purpose of the CCRI-PDA is to help project promoters develop their circular economy proposals at local and regional scale by bringing together the technical, economic and legal expertise. The CCRI-PDA should provide support for those activities necessary to prepare and mobilise finance for investment projects, such as feasibility studies, stakeholder and community mobilisation, business plans and preparation for tendering procedures or setting up a specific financing scheme/financial engineering. Proposals are expected to ensure synergies and complementarities with other EU financial schemes for circular economy projects. Proposals should ensure that all evidence, information and project outcomes will be accessible through the CCRI website

Proposals should address the following:

- The successful proposal will support the delivery of solutions to implement the European Green Deal, the circular economy action plan (CEAP) and the bioeconomy strategy. The topic will support the transition towards a sustainable, regenerative, inclusive and just circular economy across regions of Europe at local and regional scale.
- Delivery of a series of sustainable circular economy projects.
- Roll-out of innovative financing solutions/schemes at local and regional scale across Europe.



Circular solutions for textile value chains based on extended producer responsibility

Innovation Action | TRL 6-8 | 7M EUR/project | 2 to be funded | Opening: 17 Oct 2023 | Deadline: 22 Feb 2024 Link to the topic: <u>click here</u>

Textiles are the fourth highest-pressure category for the use of primary raw materials and water and fifth for greenhouse gas emissions and a major source of microplastic pollution in production and use phases. They are also a key material and product stream in the circular economy action plan. Improvements in the circularity of the textile value chains will help reduce GHG emissions and environmental pressure. EPR schemes are a lever for circularity. The purpose of this topic is to enable the optimal functioning of EPR schemes for textiles within the EU and to take into account the commitments of the textile strategy on EPR. The circular economy action plan establishes the policy objective to make the textiles sector more sustainable by boosting the circularity of textile consumption i.a. through reuse, separate collection, sorting and recycling of textiles. It also wants to limit textile waste generation and restrict exports of waste that have harmful environmental and health impacts in third countries or that can be treated within the EU.

Proposals should address the following:

- Recommendations on best innovative solutions for the identification of material composition of used textiles/textile waste embedded in the design of textile products;
- Recommendations on design for recycling for textile products that allows the use of targeted Extended Producer Responsibility (EPR) schemes;
- Recommendations on policy tools to reach EU greenhouse gas reduction targets till 2050 (climate neutrality), including the 2030 target.



Innovative circular solutions for furniture

Innovation Action | TRL 6-8 | 5M EUR/project | 2 to be funded | Opening: 17 Oct 2023 | Deadline: 22 Feb 2024 Link to the topic: <u>click here</u>

Predominantly consisting of SMEs, the EU furniture industry employs around one million European workers and manufactures approximately a quarter of the world's furniture, representing a EUR 84 billion market equating to an EU28 consumption of ~10.5 million tons of furniture per annum. Despite a notable degree of knowledge and awareness of CE principles, analyses conducted in the framework of luxury furniture show that the involvement of furniture companies in CE practices, in particular those concerning reuse and recycle actions, is still marginal, and very limited use of process and product certifications has been noted.179 According to the findings of an EU-funded project180, furniture waste in the EU accounts for more than 4% of the total municipal solid waste stream. Waste arising from commercial sources is assumed to contribute 18% of total furniture waste generation across the sector. Total annual EU furniture waste equates to 10.78 million tonnes.

Proposals should address the following:

- Increased deployment and demonstrated benefits of advanced digital solutions (e.g., through AI, robotics, IoT, blockchain) in circular businesses including waste management and recycling
- Emergence of new value chains using upcycled, recycled and/or biobased;
- resources, e.g. through industrial symbiosis, with particular attention to SMEs;
- Increased recycling rates and upcycling to new higher-value products;
- Increased uptake of recycled and/or renewable material;
- Increased deployment and market uptake of circular design, including design for easy maintenance, repair, remanufacturing and recycling;
- Increased reuse, refurbishment and remanufacturing rates and diffusion of new circular business practices, in particular in the uptake of repair, reuse, refurbishment and remanufacturing;



Systemic circular solutions for a sustainable tourism

Innovation Action | TRL - | 5M EUR/project | 2 to be funded | Opening: 17 Oct 2023 | Deadline: 22 Feb 2024 Link to the topic: <u>click here</u>

Proposals are expected to implement and demonstrate circular systemic solutions at the level of cities and regions, and include several sectors providing services for visitors and residents such as hospitality, transportation, culture, attractions, nature-based activities. Tourism can consume large quantities of energy, water, and plastics, which degrade the environmental quality of destinations and ecosystems, affecting the lives of residents. Circular tourism should consider waste and water management, batteries and vehicles, electronics and ICT, packaging, plastics, construction and buildings, GHG emissions of local and long-distance mobility, accommodation and food services.

Proposals should address the following:

- Diffusion of circular tourism services, where the use of harmful substances and the generation of waste is minimised and the use of energy, land and water is efficient;
- Deployment of replicable systemic solutions for cities and regions, where circularity is ingrained in the service design, whether for the use of residents or visitors, taking into account the specific needs of the territory (urban, rural, peripheral);
- Increased circular, zero-pollution and climate-neutral practices among providers and users of tourism services and active participation of users in circular systemic solutions;
- Deployment of innovative solutions and new, affordable technologies (including digital technologies such as AI, robotics, IoT and blockchain) that support transformation towards circularity for all actors on different systemic levels;
- Creation of jobs that facilitate circularity for different sectors, serving those who are living in or visiting cities and regions;



Programmed biodegradation capability of bio-based materials and products, validated in specific environments

Research Innovation Action | TRL 4-5 | 4M EUR/project | 2 to be funded | Opening: 17 Oct 2023 | Deadline: 22 Feb 2024 Link to the topic: <u>click here</u>

The amount of waste littered in the open environment and causing pollution from harmful substances released from such waste streams, such as from plastic littering, has reached the level of a global emergency, especially affecting soil and water quality and biodiversity in land and marine environments. The overall low level of recycling of many waste streams, including collected plastic waste, is also part of such global pollution challenge. Biodegradability of materials and products for targeted applications may offer viable end-of-life solutions in case of safe and sustainable biodegradation either in open environments or under controlled conditions, i.e., in composting plants and anaerobic digestors.

Proposals should address the following:

- Analyse those cases of uncontrolled waste littering in the open environment, particularly of plastic waste leading to pollution from nanoand micro-plastics and other contaminants released by macro-plastics, and the corresponding safe bio-based applications where biodegradation in open environments could enable safe and sustainable end-of-life options, e.g., in humanitarian contexts where waste management systems for collection, sorting and recycling are not feasible.
- Select applications for biodegradable non-single-use/single-use bio-based materials and products. Such applications should include materials and products which are biodegradable in open environments in those cases of uncontrolled waste littering, as treated in the previous point
- Develop manufacturing technologies of such bio-based materials and products with targeted performances
- Assess the overall economic feasibility of the manufacturing of the materials and products within the scope.



Digital information systems for bio-based products

Research Innovation Action | TRL 5 | 3M EUR/project | 2 to be funded | Opening: 17 Oct 2023 | Deadline: 22 Feb 2024 Link to the topic: <u>click here</u>

An effective circular economy needs improved information of material flows used in all economic sectors. Information and data on products and services are key factors to improve their production's sustainability and to meet the performance demands and needs of customers. Sharing data in an accessible and simple way, according to FAIR principles, to enable easy processing, can provide information back to the society, facilitating the inclusiveness of economic activities. Digital technologies can track and report the journeys of products, components and materials and make the resulting data securely access.

Proposals should address the following:

- Design solutions for the digitalisation of information from bio-based products and their value chains, e.g., AI-based, such as digital passports, tagging and watermarks, etc. and enable their use;
- Specialize the information from bio-based products on impacts on climate, based on estimates of carbon emissions and carbon removals, environmental impacts on soil, water, and air quality and biodiversity, end-of-life options, safety control, technical performances, predictive maintenance, and programmed integrity/biodegradation, among other data;
- Design the information from bio-based products to improve the societal readiness adaptation in terms of acceptability, and uptake of innovations by society. The information should be easily accessible by customers and consumers and to support them in making responsible and informed choices;
- Support the harmonisation and interoperability of the digital information formats;
- Enable bio-based industries to participate in the European Dataspace for Smart Circular Applications;
- Design the interfaces between the digital information from bio-based products and other applications of digital technologies ensuring interoperability in the Union.



Demonstrating the fair and just transition from GHG-intensive economies facing challenges towards circular bioeconomy model regions

Innovation Action | TRL 6-7 | 6M EUR/project | 1 to be funded | Opening: 17 Oct 2023 | Deadline: 22 Feb 2024 Link to the topic: <u>click here</u>

Successful proposal will contribute to the expected impacts of the Destination Innovative governance, environmental observations and digital solutions in support of the Green Deal', and the European policies it supports, by supporting the establishment of the innovative governance models notably to achieve better-informed decision-making processes, social engagement and innovation.

Proposals should address the following:

- Demonstrate just and fair bioeconomy solutions in regions that face difficulties in the green transition to leave no person and no place behind.
- Interact with and draw on the logistical support of the CSA "Supporting the fair and just transition from GHG-intensive economies facing challenges towards circular bioeconomy model regions" with the overall goal to demonstrate the transition to a just and fair bioeconomy for in 2-3 selected coal mining regions and/or intensive agriculture regions.
- Demonstrate the feasibility of transforming regions towards sustainable and resource-efficient bioeconomy models, while highlighting the achievement of climate targets, as well as assessing trade-offs (e.g., food security or energy-security, strategic autonomy).
- Social innovation is recommended when the solution is at the socio-technical interface and requires social change, new social practices, social ownership or market uptake.
- Implement the required multi-actor approach by involving a wide diversity of bioeconomy actors and conducting trans-disciplinary research.
- Where relevant, activities should build and expand on the results of past and ongoing research projects.



Circular bioeconomy start-up villages

Coordination Support Action | TRL - | 0,8M EUR/project | 3 to be funded | Opening: 17 Oct 2023 | Deadline: 22 Feb 2024 Link to the topic: <u>click here</u>

In line with the European Green Deal priorities, the EU's climate ambition for 2030 and 2050, the long-term vision for the EU's rural areas and its flagship initiative on research and innovation for rural communities, the European innovation agenda, the EU biodiversity strategy for 2030, the bioeconomy strategy and its vision of an economic system that acts within planetary boundaries and fosters a just transition, the successful proposal will support the development of circular systemic bioeconomy solutions in start-up villages across Europe. The proposal will contribute to the expected impacts of Destination 3 'Circular economy and bioeconomy sectors', by accelerating rural fair and just transitions, developing innovative and sustainable value-chains and sharing platforms (e.g. Startup Village Forum).

Proposals should address the following:

- Development and transfer of the concept of sustainable circular bioeconomy solutions in start-up villages;
- Showcased novel governance and business models for circular systemic bioeconomy solutions in start-up villages or their groupings;
- Strengthened position of bioeconomy start-ups in rural innovation ecosystems for the development of new value-added products, technologies and approaches;
- Enhanced training opportunities and knowledge exchange and cooperation among rural innovators;
- Improved rural innovation ecosystems to build a sustainable bioeconomy within ecological boundaries based on local resources, in particular contributing to climate and biodiversity policies and targets.



HORIZON-CL6-2024-CircBio-02-1-two-stage

Circular solutions for textile value chains through innovative sorting, recycling, and design for recycling

Research Innovation Action TF	L 5-6 5M EUR/project 3 to be funded Opening: 17 Oct2023 1st Deadline: 22 Feb 2024
Link to the topic: <u>click here</u>	2nd Deadline: 17 Sep 2024

The topic aims at improved management of the end-of-life phase of textile products. Proposals should address one or more of the following subjects and aim to combine them where relevant in a systemic way: facilitation of the disintegration of textile products through design, sorting, and recycling of textiles. Textiles are the fourth highest-pressure category for the use of primary raw materials and water and fifth for GHG emissions and a major source of microplastic pollution in production and use phases. They are also a key material and product stream in the circular economy action plan. The purpose of this initiative is also to minimise the use of hazardous substances in processing and textile treatments. Proposals shall also demonstrate and deploy innovative solutions for increased quality, non-toxicity and durability of secondary textile materials and their processing and treatments.

Proposals should address the following:

- Roll-out of systemic solutions for textile sorting, using innovative digital technologies (such as AI, robotics, IoT and blockchain);
- Roll-out of feasible solutions for facilitated disintegration to be incorporated in product design, as an enabler for recycling;
- Increased uptake of mechanical recycling solutions that deliver competitive, high-quality secondary materials;
- Roll-out of thermo-mechanical, chemical and other (e.g., enzymatic) recycling solutions that are sustainable from a zero-pollution, circular material and energy efficiency perspective.



HORIZON-CL6-2024-CircBio-02-2-two-stage

Increasing the circularity in plastics value chains

Innovation Action | TRL 6-8 | 5M EUR/project | 2 to be funded | Opening: 17 Oct2023 | 1st Deadline: 22 Feb 2024Link to the topic: click here2nd Deadline: 17 Sep 2024

The new circular economy action plan (CEAP) highlights plastics as one of the four particularly important material and product streams with regard to their circularity potential and their environmental footprint. The circularity deficits for these streams are mainly due to the: lack of trust in secondary raw materials; lack of control over supply chains; lack of secondary material efficiency and design for circularity; unsustainable product lifetimes; lack of repair services; price gap between primary and secondary material; lack of secondary material markets; insufficient collection and sorting systems; insufficient and unpredictable input quality for recycling; insufficient information about quality and quantity of materials, including knowledge about possible microplastics pollution and substances of concern, lack of communication along the lifecycle between manufacturers and recyclers; lack of involvement and empowerment of citizens that would allow environmentally informed purchases.

Proposals should address the following:

- Increased deployment and demonstrated benefits of advanced digital solutions (e.g., through AI, robotics, IoT and blockchain) in circular businesses including waste management and recycling;
- Emergence of new value chains using upcycled and/or recycled resources, e.g. through industrial symbiosis;
- Increased upcycling and recycling rates for the targeted material streams;
- Increased uptake of recycled material and upcycling to new higher-value products;
- Increased resource efficiency along and across value chains, causing a measurable reduction in GHG emissions and other environmental pollution and an increase of carbon removals;
- Increased diffusion of new circular business practices, in particular in the uptake of repair, reuse and remanufacturing, but also practices that form part of the sharing economy.



HORIZON-CL6-2024-CircBio-02-3-two-stage

Increasing the circularity in electronics value chains

Innovation Action | TRL 6-8 | 5M EUR/project | 2 to be funded | Opening: 17 Oct2023 | 1st Deadline: 22 Feb 2024Link to the topic: click here2nd Deadline: 17 Sep 2024

The circular economy action plan (CEAP) highlights electronics including information and communications technology (ICT) equipment as one of the four particularly important material and product streams with regard to their circularity potential and their environmental footprint. The circularity deficits for these streams are mainly due to the: lack of trust in secondary raw materials; lack of control over supply chains; lacking focus on material efficiency and design for circularity; unsustainable product lifetimes; lack of repair services; price gap between primary and secondary material; lack of secondary material markets; insufficient collection and sorting systems; insufficient and unpredictable input quality for recycling; insufficient information about quality and quantity of materials, including knowledge about possible microplastics pollution and substances of concern, lack of communication along the lifecycle between manufacturers and recyclers; lack of involvement and empowerment of citizens that would allow environmentally informed purchases.

Proposals should address the following:

- Increased deployment and demonstrated benefits of advanced digital solutions (e.g., through AI, robotics, IoT and blockchain) in circular businesses including waste management and recycling;
- Emergence of new value chains using upcycled and/or recycled resources;
- Increased upcycling and recycling rates for the targeted material streams;
- Increased uptake of recycled material and upcycling to new higher-value products;
- Increased resource efficiency along and across value chains, causing a measurable reduction in GHG emissions and other environmental pollution and an increase of carbon removals;



HORIZON-CL6-2024-CircBio-02-4-two-stage

New circular solutions and decentralised approaches for water and wastewater management

Innovation Action | TRL 6-8 | 5M EUR/project | 3 to be funded | Opening: 17 Oct2023 | 1st Deadline: 22 Feb 2024Link to the topic: click here2nd Deadline: 17 Sep 2024

With a rapidly changing urban, peri-urban and rural environments, increasing flooding and contamination of water resources, and in order to reap the benefits of circular economy approaches, adapt to climate change and support the implementation of water supply and sanitation related SDG, innovative approaches and technologies are required. Such innovative approaches should go beyond the central objective of protecting human health and environment, by enabling the overall concept of circularity and sustainability in terms of economic feasibility, social equity and acceptance, technical and institutional applicability, environmental protection, and resource recovery.

Proposals should address the following:

- Demonstrate the benefits of decentralised approaches for water and wastewater treatment in various geographic, climate and economic conditions and create a decision framework to help policy makers to see where a decentralised approach can bring the most overall benefits with regards to the centralised one, as well as, how to better design their integration.
- Improve co-design and co-creation processes and synergies between all relevant stakeholders and enhance public engagement to speed up the market uptake of decentralised and/or semi-decentralised solutions.
- An enhanced systemic circular economy approach along the water, cycle by using process integration, to minimise water pollution, water consumption and the environmental footprint (including energy use) of water activities and ensure water security.
- Support the implementation of relevant EU policy needs (e.g., water and marine related policies, water reuse regulation, climate change adaptation strategy, circular economy action plan, the EU zero pollution action plan, and chemical strategy for sustainability).



HORIZON-CL6-2024-CircBio-02-5-two-stage

Circular design of bio-based processes and products

Research Innovation Action TRL 5	4M EUR/project 2 to be funded Opening: 17 Oct2023 1st Deadline: 22 Feb 2024
Link to the topic: <u>click here</u>	2nd Deadline: 17 Sep 2024

The bio-based processes and products within the scope of this topic do not include food, feed, biofuels, bioenergy and cultural and recreation sectors. The establishment of safe, resilient, competitive and equitable production and consumption systems with reduced environmental impacts on soil, water, and air quality, biodiversity and climate, is part of the objectives of the EU circular economy.

Proposals should address the following:

- Develop optimized design of bio-based processes and bio-based products to improve their circularity, taking into account the opportunity to re-use recycled materials in the local market.
- Assess the safety, environmental sustainability and climate neutrality of circular bio-based processes and products along their value chains, including of the biological feedstock from land and sea used in the production processes.
- Include the assessment of economic and social aspects of the improved production and consumption bio-based systems in terms of increased economic value along the whole value chains, circular patterns of products involving consumers, i.e., durability, reuse, repair, remanufacturing and recycling patterns, improved economic value of recycled materials, job opportunities, etc.;
- Develop product information systems demonstrating the safe and sustainable use of biological resources and the resource efficiency along value chains, from the production to the extended circular product lifetimes and appropriate disposal. Transparent information should aim at improving the societal acceptance of bio-based innovation and at supporting consumers and customers in making responsible and informed choices.



Innovative technologies for zero pollution, zero-waste biorefineries

Research Innovation Action | TRL 4-5 | 4M EUR/project | 2 to be funded | Opening: 17 Oct 2023 | 1st Deadline: 21 Feb 2024Link to the topic: click here2nd Deadline: 17 Sep 2024

Pollution from anthropogenic activities undermines the integrity of Earth ecosystems and severely affects the natural resources essential for human life. The EU bioeconomy strategy 2030 sets environmental protection at the basis of the modernisation of bio-based industries in the Union, to ensure a trustful green transition of EU economy away from a linear fossil-based system.

Proposals should address the following:

- Design integrated technical solutions reducing exhaust flows from bio-based processes through innovative technologies of extraction, recirculation, fractionation and conversion of such flows, to reach the zero-pollution ambition starting from the emissions to soil, water and air.
- Individuate replacement of hazardous substances used in the processes with safe bio-based ones;
- Design the biorefinery operations to re-circulate any process flows such as process air and water and to increase energy efficiency including heat recovery;
- Design the biorefinery operations in order to reduce noise emissions;
- Design circularity of any processes, including through symbiosis between industrial installations to share and exploit materials and carrier streams, and looking on the best practices already available or under development, including in other EU R&I programmes to reach the zero-waste ambition;
- Develop a case-study of integrated zero-pollution technical solutions in a selected biorefinery and design the adaptation of the case-study to be operational at all scales, from the large/medium to the small scale (the latter shows potentially high specific environmental impacts);



HORIZON-CL6-2024-CLIMATE-01-5

Climate-smart use of wood in the construction sector to support the New European Bauhaus

Research Innovation Action | TRL - | 7M EUR/project | 2 to be funded | Opening: 17 Oct 2023 | Deadline: 22 Feb 2024 Link to the topic: <u>click here</u>

Wood materials remain considerably under-utilised in the construction sector despite their durability and appreciation by end users. At the same time, there is a need for making the construction sector more renewable and circular, which includes the use of currently underused timber such as hardwoods, damage wood and post-consumer wood, while including circularity as part of a broader system and design loop. This requires new raw material sources and secondary material, technologies, and designs for wood components, specified products and for wooden buildings. Buildings need also to be adapted to climate change, including as regards summer and winter thermic performance.

Proposals should address one of the following:

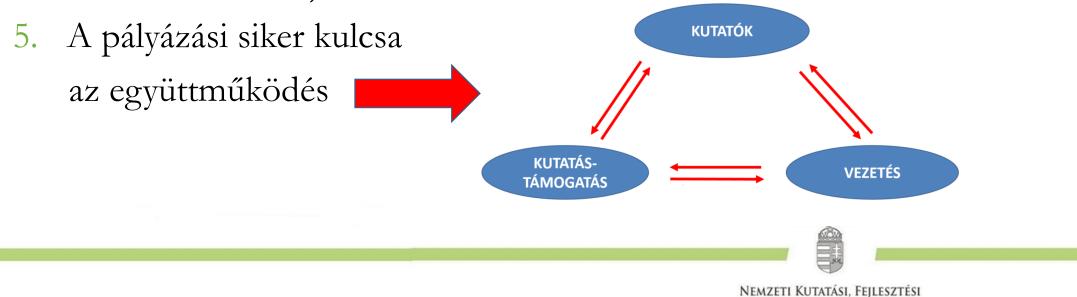
- Analyse the potential market and new technologies (such as the use of AI, IoT sensors or robotics) as well as processes for the utilisation of hardwoods, low quality, damage, and post-consumer wood in the construction sector, including for the refurbishment of buildings.
- Explore the potential of zero-waste concepts by developing solutions for each source type to turn into viable products as elements and as whole buildings in the wood construction sector.
- Design wood building blueprints based on these products and other under-utilised bio-based materials, taking into account the reuse, adaptability and healthy living environment (e.g. avoidance of hazardous substances) into the design.
- Study and integrate human health and wellbeing aspects, as well as the cultural traditions of local crafts and design languages, as integral elements of the built space.
- Analyse and propose systems to overcome technical, logistical, legal, business, political, economic, knowledge and social barriers, challenges and opportunities and derive integrated policy recommendations and business strategies for enlarging the wood construction sector in Europe.



5 gyakorlati üzenet a Horizon Europe keretprogramban való egyéni és intézményi sikerhez

ÉS INNOVÁCIÓS HIVATAL

- 1. Számoljunk le a Horizon Europe keretprogramot övező mítoszokkal!
- 2. Legyünk láthatóak!
- 3. Legyünk láthatóak minél többen!
- 4. A siker sokrétű, a részvétel egy organikus építkezés ("nem sprint, hanem maraton")



KÖSZÖNÖM A FIGYELMET!

Szemere Dorottya NKFIH

BUDAPEST – 2023.12.01.

