



Bio-Based Industries
Joint Undertaking

2019 CALL FOR PROPOSALS



The catalyst for a sustainable
bio-based economy in Europe



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MISSION



BBI JU's mission is to implement the Strategic Innovation & Research Agenda (SIRA) developed by industry in collaboration with the EU, operating under Horizon 2020 rules and procedures.

BBI JU organises yearly Calls for proposals to support research, demonstration and deployment activities enabling the collaboration between stakeholders along entire value chains, covering primary production of biomass, processing industries, and final use.



VISION

Our vision is a competitive, innovative and sustainable Europe leading the transition towards a post-petroleum society while decoupling economic growth from resource depletion and negative environmental impacts.

Together with pan-European and cross-sector industries/SMEs, research organisations, universities, regions, and countries, we will develop a bio-based economy for Europe.

1 INTRODUCTION



Philippe MENGAL

Executive Director
*Bio-based Industries Joint
Undertaking*

This year marks five years since our first Call for proposals and what a great journey it has been. Since our first Call in 2014, the BBI JU project portfolio has grown to 82 projects with more than 900 beneficiaries from 32 countries and a total funding of EUR 499 million. By May 2019, another 19 projects from the 2018 Call will be added to the portfolio, raising the number of beneficiaries to almost 1200 from 35 countries. The current project portfolio is well balanced both in terms of geographical coverage, types of actions and across the value chains of our Strategic Innovation and Research Agenda (SIRA). Furthermore, even though BBI JU is an industry-driven initiative, research organisations and higher education establishments play a significant role in our projects and attract 28.4 % of funding. Additionally, 41 % of our beneficiaries are SMEs.

As we enter our sixth Call year, I can proudly say that our portfolio is maturing and our projects are delivering concrete results. The two main positive effects of BBI JU are still the structuring and mobilising effect of key stakeholders across sectors, regions and countries towards the creation of new value chains. In fact, our projects are expected to create 143 new cross-sector interconnections and 113 new bio-based value chains, well surpassing the targets in SIRA, which called for 36 new interconnections and 10 new value chains by 2020.

The BBI JU portfolio is also delivering tangible socio-economic results. For example, our portfolio now includes seven flagship biorefinery plants, well spread throughout Europe, with two more coming in 2019. The biorefineries are creating jobs in rural areas, contributing to the diversification and growth of income of farmers, as well as to rural development and reindustrialisation.

All these achievements demonstrate that the SIRA developed by the Bio-based Industries Consortium, based on extensive consultation with the European Commission, is more relevant than ever and in this year's Call we will continue in this direction. With an indicative budget of EUR 135 million, our 2019 Call will cover 21 topics in four strategic orientations: feedstock, process, products, and market uptake. I invite you to apply for this opportunity and join our community of beneficiaries who are working together to build a bio-based sector that is putting Europe back on the map of attractive areas for investment in bio-based industries.

Best of luck in the preparation of your proposals!





John BELL

Director for Bioeconomy
*Directorate-General for
Research and Innovation,
European Commission*

Over the last years, the European Commission has sent clear policy signals regarding the priority it attaches to the bioeconomy. A major recent development has been the adoption in October 2018 of the updated Bioeconomy Strategy, which aims at accelerating the deployment of a sustainable European bioeconomy to maximise its contribution to the 2030 Agenda and its Sustainable Development Goals as well as to the EU's commitments under the Paris Agreement.

The updated Bioeconomy Strategy proposes concrete actions on three major objectives aimed at scaling up and strengthening the bio-based sectors, unlocking investments and markets, deploying local bioeconomies across Europe, and understanding the ecological boundaries of the bioeconomy.

Key actions in the updated Bioeconomy Strategy relating to the bio-based sectors include launching a EUR 100 million Circular Bioeconomy Thematic Investment Platform, facilitating the development of new sustainable bio-refineries, intensifying the mobilisation of public and private stakeholders, as well as enabling ten European cities to turn organic waste from a societal problem into a valuable resource for the production of bio-based products.

The reinforcement of the bio-based sectors drives the necessary transformation towards greener, more circular and climate-smart European industries. It also helps to reinvigorate primary production sectors at the heart of our economy, such as agriculture, forestry, aquaculture and fisheries.

The 2019 Call of the BBI Initiative represents another opportunity of building the competitive and sustainable bio-based sectors we want for all of Europe and its citizens. I am confident that we will bring the research and innovation priorities of the European Union to the forefront – with new products, new services, new markets, and new horizons for the bio-based sectors in Europe.



Dirk CARREZ

Executive Director
*Bio-based Industries
Consortium (BIC)*

Thanks to the BBI JU, knowledge and investments in innovative bio-based production is now staying in Europe. BIC companies have around €5.5 billion of bioeconomy investments in the pipeline for 2018, compared to €2 billion in 2014. The number of non-EU BIC companies investing here is also growing.

New innovative value chains are also being established by industry and the increased involvement of brand owners and end-users is resulting in better performing products that respond to consumer needs. On top of this, EU-13 countries are now, more than ever, aware of the bioeconomy and are participating in BBI JU projects.

But what about the future? Together with several other stakeholders, BIC has developed a Vision for a circular, bio-society for 2050, where informed citizens make sustainable choices while acknowledging and benefitting from a bioeconomic societal model.

In this society, bio-based products and services are both competitive in price and performance with their fossil-based counterparts. The EU, having invested early in highly efficient and sustainable biomass production for food, feed and non-food, is the global hub for bio-based industrial investment and the international reference point for the circular bioeconomy. Europe's sustainable bio-based industries also lead the global effort to combat climate change, moving Europe towards a carbon-neutral society.

With the right mindset, the bio-based industries will realise this circular bio-society, making an active contribution to achieving twelve of the UN's Sustainable Development Goals and reducing dependence on fossil resources, to the benefit of the planet, the economy and the citizen. The current BBI JU has established these foundations, by building collaboration between industrial sectors and disciplines. Let's now continue constructing this architecture.

2 ABOUT THE BIO-BASED INDUSTRIES JOINT UNDERTAKING (BBI JU)



DEVELOPING A SUSTAINABLE BIO-BASED INDUSTRY SECTOR IN EUROPE

THE BIO-BASED INDUSTRIES SECTOR

The bioeconomy covers the use of renewable biological resources and their conversion into food, feed, bio-based products and biofuels via a range of technologies. In 2015 the EU28 bioeconomy sector accounted for 18.5 million jobs for a total turnover around 2.29 trillion euros.

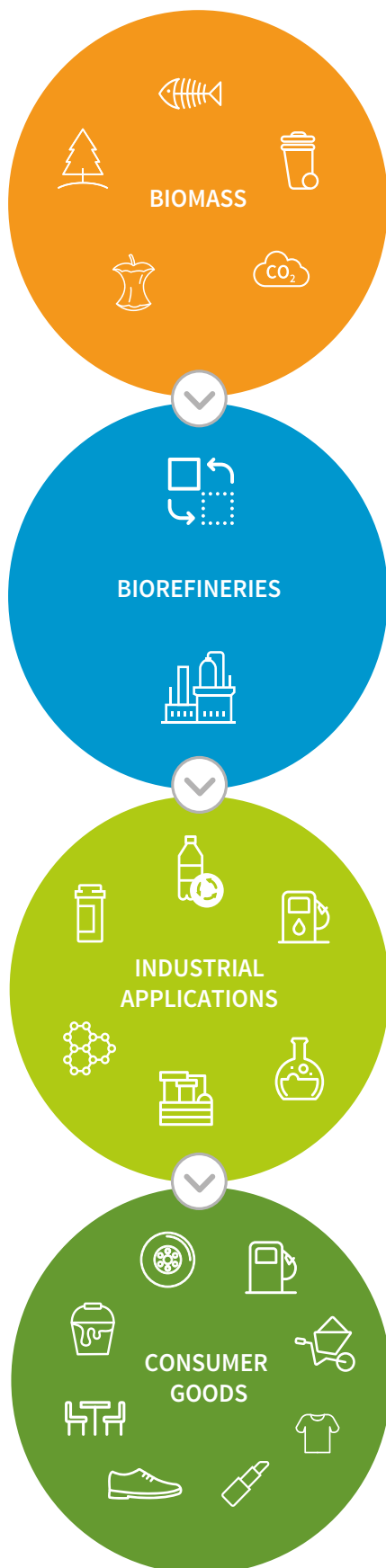
Bio-based industries are a significant and fast growing subsector of the bioeconomy, accounting for 3.7 million jobs and around € 700 billion turnover in the EU28*. Bio-based industries use renewable and sustainably-sourced biological raw materials, called biomass, as the basic materials for producing biobased chemicals, materials and fuels replacing in a wide range of applications their oil-based equivalent.

However, a distinct and coherent single European bio-based industry sector does not yet exist, and currently comprises a wide range of different industrial sectors, often working in isolation.

Existing economic segments like the chemical, forestry, pulp and paper sectors, as well as technology providers including biowaste industries, all have an interest in moving from an unsustainable fossil-based economic model to a bio-based one. This can be achieved by improving the cooperation around all parts of the value chain and encouraging crosssectoral collaborations.

Integrated biorefineries play a central role in the bio-based industry sector. They convert biomass, including organic waste, through efficient and innovative technologies into different types of bio-based products such as feed, fibres, materials, chemicals and bioenergy. By ensuring a sustainable supply of suitable biomass we can reduce the current European reliance on imported fossil-based raw materials.

*Data: Eurostat (2015)



- ▶ Waste streams
- ▶ Municipal organic waste
- ▶ By-products & side-streams
- ▶ Forestry side-streams
- ▶ Dedicated agricultural crops and residues
- ▶ Aquatic biomass
- ▶ Food processing residues
- ▶ Process and waste water
- ▶ Bio-based CO₂

- ▶ (Pre-) treatment
- ▶ Transformation

- ▶ Bioplastics
- ▶ Building blocks
- ▶ Biopolymers
- ▶ Surfactants
- ▶ Active ingredients
- ▶ Biomaterials
- ▶ Biolubricants

- ▶ Biofuels
- ▶ Textiles
- ▶ Packaging
- ▶ Solvents
- ▶ Furniture
- ▶ Personal care
- ▶ Construction materials
- ▶ Pharmaceuticals
- ▶ Clothing
- ▶ Car components



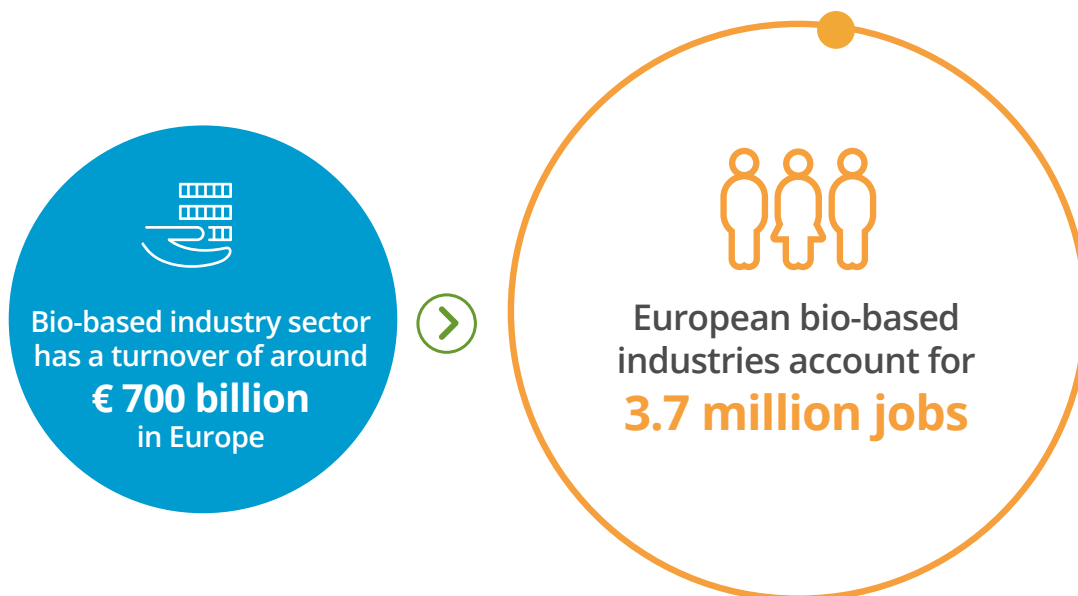
CHALLENGES FOR THE EUROPEAN BIO-BASED INDUSTRIES

The European economy is heavily dependent on fossil-based raw materials as a source of chemicals, materials and energy. Reducing this dependency is of paramount importance in view of the increasing depletion of fossil resources and their impact on climate change.

A strong European bio-based industrial sector will help to reduce Europe's dependency on fossil-based products, moving Europe more quickly towards the many socioeconomic benefits of a post-petroleum society. To unlock their full potential, Europe's bio-based industries will need to make sustainable, resource-efficient and largely waste-free use of Europe's renewable materials to play an important role in spurring sustainable growth and boosting Europe's competitiveness.

However, bio-based industries are still considered as an emerging sector that is extremely fragmented across geographical areas and organisations. This sector faces specific challenges related to feedstock supply, inadequate logistical infrastructure, and lack of consumer awareness.

Biorefineries require large, risky investments, and the sector is also faced with non-technological and regulatory hurdles on several levels of the value chains.



**Data: Eurostat (2015)*



WHAT IS THE BIO-BASED INDUSTRIES JOINT UNDERTAKING (BBI JU)?

The BBI JU initiative is a € 3.7 billion public-private partnership between the European Union (EU) and the Bio-based Industries Consortium (BIC). It is an autonomous EU body operating under Horizon 2020 rules and procedures, dedicated to investing in research and innovation projects.

In 2012, as part of the impact assessment of the initiative, the European Commission conducted a public consultation. Respondents answered overwhelmingly in favour (over 94%) for the launch of an EU initiative for bio-based industries, and a large majority requested an institutional public-private partnership between the EU and the bio-based industry.

Bio-based industries and their value chains are faced with complex and substantial technological and innovation challenges. BBI JU was created to act as a catalyst to tackle these challenges by de-risking investments for private research and innovation, structuring the sector to allow it to reach critical mass in a focused and coherent way. This will enable long-term stability and predictability for the sector.

The BBI JU initiative is about connecting key sectors, creating new value chains and producing a range of innovative bio-based products to ultimately create a new bio-based community and economy.



BBI JU GOVERNANCE



Executive Director

Responsible for day-to-day management of the BBI JU in accordance with the decisions of the Governing Board

Programme Office

Responsible for the management of the grant management lifecycle and implementation of specific activities to further consolidate BBI JU's vision and mission

Governing Board

(10 seats)

Responsible for the strategic orientation and the operations of the BBI JU and for the supervision of its activities

States Representatives Group

(Member States + Associated Countries)

Advisory body of the BBI JU, responsible for providing advice to the Governing Board on the programme progress and achievement of its targets

Scientific Committee

(15 seats)

Advisory body of the BBI JU, responsible for providing scientific advice to the BBI JU, such as scientific priorities to be addressed



Common Vision

BBI JU will realise the common vision of the EU and BIC for a competitive, innovative and sustainable Europe leading the transition towards a post-petroleum society, while decoupling economic growth from resource depletion and negative environmental impacts.

Together with pan-European and cross-sector industries/SMEs, research organisations, universities, regions, and countries, we will develop an economy that:

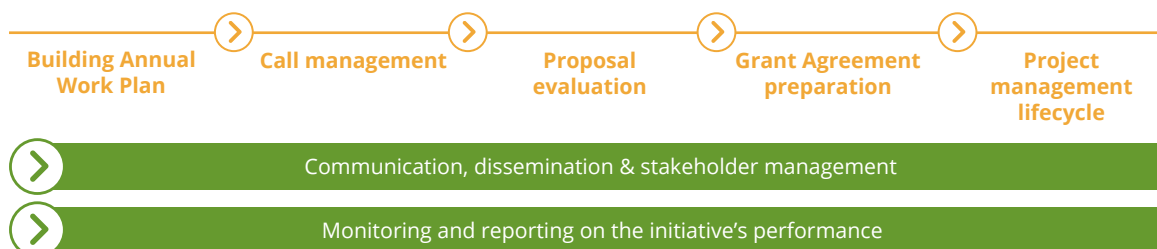


Mission

BBI JU's mission is to implement the Strategic Innovation & Research Agenda (SIRA) developed by industry in collaboration with the EU, operating under Horizon 2020 rules and procedures.

BBI JU organises yearly Calls for proposals to support research, demonstration and deployment activities enabling the collaboration between stakeholders along entire value chains, covering primary production of biomass, processing industries, and final use.

BBI JU is specifically in charge of:





Objectives

BBI JU's objectives are to contribute to a more resource-efficient and sustainable low-carbon economy and to increasing economic growth and employment, in particular in rural areas, by developing sustainable and competitive bio-based industries in Europe. These objectives will be based on advanced biorefineries that source their biomass sustainably, and in particular to:

1

Demonstrate technologies that enable new chemical building blocks, new materials, and new consumer products from European biomass, which replace the need for fossil-based inputs

2

Develop business models that integrate economic actors along the value chain from biomass supply via biorefinery plants to consumers of bio-based materials, chemicals and fuels, including the creation of new cross-sector interconnections and supporting cross-industry clusters

3

Set-up flagship biorefinery plants that deploy the technologies and business models for bio-based materials, chemicals and fuels and demonstrate cost and performance improvements to levels that are competitive with fossil-based alternatives

HOW WILL BBI JU ACHIEVE ITS OBJECTIVES?

BBI JU is using its funding programme to support research and innovation to demonstrate enabling technologies which can produce new chemical building blocks, new bio-based materials, and new consumer products from sustainable sources of European and sustainably sourced biomass. This will reduce the need for raw materials based on non-sustainable inputs such as petroleum and natural gas into the European Economic Area.

Calls

BBI JU implements open Calls for proposals supporting research and innovation actions which operate under Horizon 2020 rules and procedures. BBI JU Calls are open to private & public 'for-profit' and 'not-for-profit' organisations, including large enterprises and SMEs, research and technology organisations (RTOs), universities, associations, and any other type of legal entity interested in BBI JU activities.

Types of Action



Research & Innovation Actions (RIA)

Research & Innovation Actions aim to fill the technological gaps within specific value chains, leading to the development of new knowledge or a new technology. RIAs cover actions with a Technology Readiness Level* (TRL) 3 – 5 by the end of the project.



Innovation Actions - Demonstration Actions (IA-DEMO)

Demonstration Actions include the establishment of a demo-scale production facility in Europe, being a new installation, a substantial modification of an existing facility, or the use of existing demo facilities. Demonstration projects aim at reaching TRL 6-7 by the end of the project, so that the scale-up of the technology and the business case are demonstrated.



Innovation Actions - Flagship Actions (IA-Flagship)

Flagship Actions aim to support the application / market introduction of an innovation that has already been demonstrated but not at a size enabling commercial deployment. A flagship project must be the first of its kind in Europe and address a complete value chain from procurement, growth, feedstock supply via biorefineries to the final product or products. Flagship projects should aim to reach a TRL 8 by the end of the project.



Coordination and Support Actions (CSA)

Coordination & Support Actions typically address cross-sectorial challenges, and support value chains through knowledge development, studies and networking. Funding covers the coordination and networking of research and innovation projects, programmes and policies.



BBI JU ACTIONS



RIA
Research and Innovation
Actions



IA-DEMO
Innovation Actions -
Demonstration



IA-FLAG
Innovation Actions -
Flagship

TRL1 TRL2



TRL3 TRL4 TRL5



TRL6 TRL7



TRL8



TRL9

Development and validation
of technology

Demo-scale production
facility in Europe

A first-of-a-kind application,
large-scale production
facility in Europe



CSA
Coordination and Support Actions -
no link to TRLs*

* TRLs (Technology Readiness Levels) are a method of measuring the maturity level of the technology development in a project.
This method provides a common understanding of technology status and innovation.

PARTICIPATION & FUNDING RATES PER ACTION (INDICATIVE)

Type of Participant	RIA	IA (DEMO & Flag)	CSA
Large Industries	*	70%	n/a
SMEs	100%	70%	100%
Universities & RTOs (non profit, legal entities)	100%	100%	100%
Duration of the project	3-5 years	4-5 years	1-3 years

* non-eligible for funding

More information about eligible costs is available in the Annual Work Plan and in the guidelines for participants available via the Funding and Tender Opportunities - SEDIA portal and www.bbi-europe.eu/participate/participate.



Widening and SMEs participation – synergies and other initiatives

A broad country participation in the BBI JU programme is desired in order to leverage the full European bio-based potential. As to be expected with a new programme initiative, take up rates have been higher with some Member States and Associated Countries which were already in a position to take advantage of the programme's early Calls, as compared to certain - e.g. EU13 - member states. In response to this issue, BBI JU, in collaboration with the States Representatives Group (SRG) and its partners (European Commission and BIC), implemented a strategy elaborated with the objective of widening the participation of Member States, Associated countries, regions and stakeholders in the BBI JU programme. The strategy includes an action plan at European, national and regional levels to mobilise stakeholders in BBI JU related areas. Following the implementation of this strategy, it has been observed an effective growth in the participation rates of eastern and central Europe countries and in Member States from the Mediterranean area.





With respect to SMEs, BBI JU ensures that innovative SMEs are an integral part of the programme, and has a specific approach to provide support for SMEs concerning critical issues such as financing, market information and forecasts, legal obstacles and international partnering.

Moreover, despite the fact that BBI JU is an industry-driven initiative, the scientific community (universities and research centres) also plays a key role in contributing to knowledge creation and to the technology transfer. BBI JU is also a huge opportunity for them to build relationships with industry and to be part of high TRL projects, to scale-up technologies and to valorise their IPs.

Finally, BBI JU promotes close synergies with other European funding instruments such as the European Structural and Investment Funds (ESIF) in the context of smart specialisation strategies, the European Fund for Strategic Investments (EFSI), the European Bank for Reconstruction and Development (EBRD) and a number of other relevant Horizon2020 programmes. BBI JU-funded projects might find synergies with projects funded under other relevant instruments such as ESIF, SPIRE, H2020 SC2, national funding instruments, etc. or financed via the European Investment Bank (EIB). BBI JU works towards promoting these synergies to maximise the impact of the BBI JU funding.

EXPECTED RESULTS AND BENEFITS – HOW IS BBI JU MONITORED?

The progress of the BBI JU programme is monitored at four levels:

-  **Efficiency and cross cutting issues** monitoring is based on Horizon 2020 Key Performance Indicators (KPIs) common to all Joint Undertakings (JUs) and further indicators linked to programme monitoring and cross-cutting issues, like gender dimension, widening participation, SME participation and private sector participation.
-  **The leverage effect** of private contribution versus public funding is monitored on a yearly basis. The BBI JU reports in-kind contribution in projects (IKOP) and in-kind additional activities (IKAA) on a yearly basis, together with the calculation of the leverage effect.
-  **Project outcomes** are monitored through 8 KPIs described in the SIRA, measured against yearly project reporting and agreed objectives, in terms of new cooperation, new cross-sectors collaborations, new bio-based building blocks, new consumer products, new large scale biorefineries and higher TRL in RIAs.
-  **Monitoring of expected socio-economic and environmental impact** of the BBI JU projects based on a yearly reporting of project coordinators.

Outcome of the BBI JU projects

Project outcomes monitored through eight KPIs described in the SIRA are measured against yearly project reporting in terms of new cooperations, new cross-sectorial collaborations, new bio-based building blocks, new consumer products and new large-scale biorefineries. KPI reporting took place for the third time in 2018, and confirmed the trend of 2017 with all KPIs showing better results compared to agreed objectives, further confirming the contribution to the systemic evolution of the sector in bridging the gap between research and the market. The two main positive effects of BBI JU remain the structuring effect in organising the value chains across sectors and the innovation-driven mobilizing effect of key stakeholders and investments across sectors and across geographical areas, thus fostering a systemic change in the sector.

Specifically, and after the implementation of 4 out of 7 Calls for proposals (2014, 2015, 2016 and 2017), BBI JU's projects reported the following expected outputs:



143

expected cross-sector interconnections (against a target of 36 by 2020). These data show the impact of collaborative research in accelerating the cross-sectorial integration along and across value chains at a faster (than expected) rate.

147

expected new bio-based materials (against a target of 50 by 2020), 40% of them offering a better performance and 18% of them being breakthrough.

113

expected new bio-based value chains (against a target of 10 by 2020), 55% of them being linked to new technologies, 55% linked with new biomass sources and 71% of them offering new products and/or markets. This confirms the significant structuring effect of the BBI JU programme and the fact that the future of the sector is also concerned with the creation of a network of a higher number of new, interconnected value chains than initially estimated.

65

expected new demonstrated bio-based "consumer" products (against a target of 30 by 2020), 78% of them ensuring a reduction in CO₂ emissions.

07

flagship projects (against a target of 5 by 2020).

82

granted projects (against a target of 200 by 2020).

67

expected new bio-based building blocks based on biomass of European origin (against a target of 5 by 2020), 29% of them offering a better performance than their fossil-based equivalents and 27% representing breakthrough building blocks that have no fossil-based equivalent.

33

expected validated "TRL gain" technologies (against a target of 20 by 2020).



-50% greenhouse gas emissions by 2030

**compared to 1990 levels*



+ 20% biomass supply by 2030



The aim is to replace at least 30% of existing petroleum-based products with better, more sustainable and economically-viable version by 2030

Leveraging private investment

BBI JU activities clearly reflect the ambitions of our industrial partners to contribute to a sustainable society in the longer term. It's clear that this vision cannot be achieved by one single party working alone; it requires commitment from a range of private and public parties, and each needs to play their role.

BBI JU's programme is built around leveraging public funding against private contributions to encourage industry to invest through the BBI JU Programme via financial contributions, and by investing in bio-based infrastructure through additional investments.

By solving these infrastructural challenges, BBI JU will encourage industry to take the critical steps to 'de-risk' operations, including the secure availability of local, affordable raw materials, and demonstrating new technologies at an industrial scale.

Collectively this will encourage more bio-based investments in Europe and 'de-risk' the operations for industry in this emerging sector. As an indication of the potential of the bio-based industries investment in Europe the figures identified by BIC show that their members' estimated pipeline investments across EU regions were € 2 billion in 2014, rising to € 5.5 billion in 2018.

The added-value for European citizens

Overall, everyone benefits from a strong European bio-based industrial sector which can significantly reduce Europe's dependency on fossil-based products. It will help the EU meet its climate change targets, and lead to more sustainable and more environmentally friendly growth, preparing the EU for a post-petroleum era.

BBI JU has as its guiding principle the need to maximise and valorise the complexity of nature, so that developed products and applied processes make the most of materials' natural properties. This results in the development of a sustainable sector, and goes a step further in improving the environment and our quality of life.

More concretely, bio-based industries are capable of delivering sustainable everyday products that are comparable or superior to fossil-based ones by their outstanding performance, competitive price and/or availability.

BBI JU's projects are developing the potential of waste as well as agricultural and forestry residues. They are perfect examples of the circular economy in action, meaning sustainable, resource-efficient and largely waste-free utilisation of Europe's renewable raw materials for industrial processing.

The environment impact potential is also huge as two third of the ongoing projects report producing bio-based products with lower greenhouse gas emissions and more than half of them contribute to waste reduction, reuse, valorization or recycling.

The creation of a competitive bio-based infrastructure in Europe is expected to significantly boost employment, as well as support regional development by expanding local economies. Current results show that most of the projects expect to contribute to job creation and around half of them being in rural and coastal areas. This will result in new, higher and more diversified revenues for farmers and cooperatives and will create jobs in rural areas.



400.000 skilled jobs by 2020
rising to **700.000 skilled jobs by 2030,**
80% of which will be in rural areas

3 CALL CONDITIONS, RULES AND EVALUATION



Disclaimer: the overview of the BBI JU Call 2019 conditions, management rules and evaluation texts provided in this document is aimed at providing a quick summary. For a full description of the guidelines and procedures and consultation of the full topics, please consult the Annual Work Plan 2019 and other relevant Horizon 2020 Legal Framework documents available on www.bbi-europe.eu/participate/call-proposals-2019 and <http://www.bbi-europe.eu/about/reference-documents>.

The BBI JU operates under the Horizon 2020 rules for participation, set out in Regulation (EU) No 1290/2013 of the European Parliament and of the Council of 11 December 2013.

CALL CONDITIONS



Call identifier	H2020-BBI-JTI-2019
Publication date	04 April 2019
Indicative deadline	04 September 2019 17:00:00 (Brussels local time) - (single stage call)
Indicative budget	€ 135 million

Indicative budget by type of actions	
Type of action	Indicative budget
Research and Innovation Actions	€ 52 000 000
Innovation Actions - Demonstration Actions	€ 31 000 000
Innovation Actions - Flagship Actions	€ 47 000 000
Flagship BBI2019.S01.F1	€ 15 000 000
Flagship BBI2019.S01.F2	€ 20 000 000
Flagship BBI2019.S01.F3	€ 12 000 000
Coordination & Support Actions	€ 5 000 000
Total	€ 135 000 000

CALL MANAGEMENT RULES

Rules for participation in BBI JU Calls for proposals are the same as in Horizon 2020. This means that BBI JU Calls are open to private for-profit and not-for-profit organisations, including large enterprises as well as SMEs, Research and Technology Organisations, universities, associations, or any legal entity interested in BBI JU activities.

Everyone can apply and everyone is strongly encouraged to do so. The principles of openness, transparency and excellence prevail, and the three Horizon 2020 criteria for evaluation of excellence, impact and quality & efficiency of implementation apply. The main exception is that large enterprises are not eligible to receive funding for Research and Innovation Actions and Coordination and Support Actions under the BBI JU programme.

EVALUATION

The BBI JU programme office is the neutral facilitator for the administration of the BBI JU Call processes and procedures. It selects and appoints independent experts to conduct a fair and transparent evaluation of the received proposals. The evaluation process is monitored by independent external observer(s), who ensure that each evaluation process is conducted in line with these principles.





Proposals are evaluated on their scientific excellence, potential impact, and potential of proposal implementation to resolve the issues posed in the Call topics. Proposals (excluding CSAs) are also evaluated on their potential socio-economic impact, and all processes and products described in the proposal have to undergo a lifecycle analysis.

External evaluators are selected based on their expertise, and come from different professional backgrounds including industry (both large and small), academic and research institutions, public bodies, associations, etc.

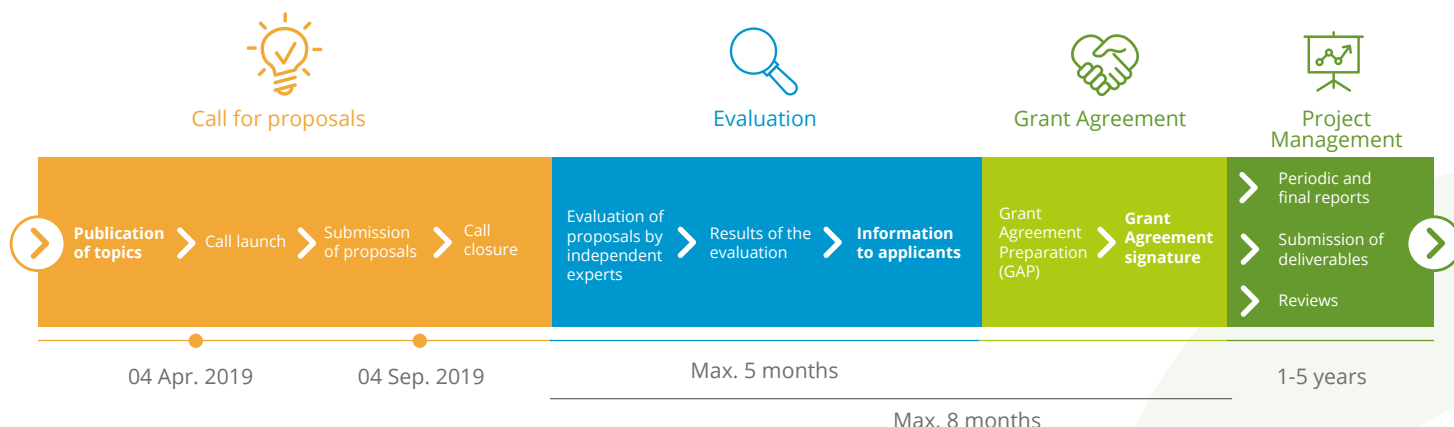
FUNDING AND TENDER OPPORTUNITIES – SEDIA

The Funding and Tender Opportunities – SEDIA (former Participant Portal) is the single-entry point for all interactions with the EU research and innovation programmes offered by the European Commission, its Executive Agencies, and BBI JU. It offers tools and services that facilitate the monitoring and management of BBI JU proposals and projects.

All BBI JU Call information and documents are published centrally on the Funding and Tender Opportunities – SEDIA. These include:

-  Call description
-  Topics and submission service
-  Call documents
-  FAQs and Support

GRANT MANAGEMENT LIFECYCLE





4 CALL FOR PROPOSALS 2019



THE STRATEGIC ORIENTATIONS

The 2019 Annual Work Plan and Budget (AWP) is the sixth one on the critical path towards 2020. It continues to be based on the acceleration of the development of new sustainable value chains from biomass feedstock supply via efficient processing, to the acceptance and application of bio-based products in the end-markets.

The AWP 2019 confirms the focus on better integrating biomass feedstock suppliers at the front end of the value chain, creating a demand for biomass feedstock from biorefining processes. Similarly, the AWP will stimulate the building of partnerships with end market actors to create a 'market pull' for bio-based products for identified applications.

The Strategic Innovation and Research Agenda (SIRA) of 2013 included the main defined technological and innovation challenges to developing sustainable and competitive bio-based industries in Europe. It was adjusted in 2017 namely through the addition of some new objectives that reflect the ambitions of members of the Bio-based Industries Consortium (BIC).

A priority paper 2019-2020 has been developed by BIC in collaboration with the EC considering the factual results from the 2014 – 2016 calls and the content of BBI JU AWP 2017 and 2018 versus the 2020 goals set out in the SIRA. As a result of this analysis, the scientific priorities for 2019 are the following, well aligned with the four strategic orientations of the SIRA:



Foster supply of sustainable biomass feedstock to feed both existing and new value chains



Optimise efficient processing for integrated biorefineries through research, development and innovation (R&D&I)



Develop innovative bio-based products for identified market applications



Create and accelerate the market uptake of bio-based products and applications

In 2019, the Call has an indicative budget of EUR 135 million for a total of 21 topics with 10 RIA topics, 4 CSAs, 4 DEMOs and 3 FLAGS.

2019 CALL TOPICS

Disclaimer: the scope sections of the BBI JU Call 2019 topic texts described in this document are indicative and solely aimed at providing a quick overview of all Call 2019 topics. However, all proposal evaluations will be based on the full topic texts and the relevant Horizon 2020 Legal Framework as described in the Annual Work Plan 2019 available on <http://www.bbi-europe.eu/about/reference-documents>.

The anticipated total contribution of BBI JU funding shown for each topic is the estimated amount which would allow the specific challenge to be addressed appropriately. Nonetheless, this estimate does not preclude the submission and selection of proposals with another requested contribution.



Strategic Orientation 1 - FEEDSTOCK

Foster supply of sustainable biomass-feedstock to feed both existing and new value chains

The first strategic orientation aims to expand and diversify the biomass feedstock portfolio through improving utilisation of existing sources and tapping into new sources.

Focus areas for this strategic orientation are:

- Improve the utilisation of existing feedstock sources from the agro-, forest, marine, chemical and waste industry sectors, also in geographical areas with currently low biobased activities. This includes feedstock from the paper and pulp and the food production and processing industries.
- Expand the utilisation of the organic fraction of municipal solid waste (MSW), sludge from urban wastewater treatment, industrial organic waste and residues from perennial crops as a feedstock for the bio-based industry.
- Exploit the opportunities of aquatic biomass as feedstock for the bio-based industry.
- Valorise co-products and residues from bio-based operations, including (existing) biorefineries.



IMPROVE THE UTILISATION OF EXISTING FEEDSTOCK SOURCES

BBI2019.S01.D1 – SCALE UP CONVERSION OF LIGNIN INTO VALUABLE COMPOUNDS FOR APPLICATION IN SPECIFIC MARKET SECTORS



INDICATIVE FUNDING: EUR 7 million

TYPE OF ACTION: Innovation Action – Demonstration Action

Expanding the use of lignin as a feedstock for conversion into chemicals and materials such as fibres, resins and composites, is being researched and developed through the use of several technologies. Some of these technologies are proving themselves at pilot level.

The applicability of lignin-based materials is enormous because of their high versatility and variety. Market actors in various sectors are demanding suitable quantities of lignin-based products at specified qualities to test application in their end products. Industry needs to scale up the developed technologies in an industrial setting and prove their technical and economic feasibility in dedicated value chains. While delivering higher quantities of the targeted products, industry also needs to achieve and validate the performance of the products intended to meet market demand. Achieving both quantity and quality as required by the market, will set the basis for an extensive uptake of lignin-based products.

The **specific challenge** is to demonstrate the efficient and sustainable conversion of lignin into compounds (intermediates and/or final products) that are applicable in a variety of market applications.

BBI2019.S01.D2 – PRODUCE COMPONENTS FOR VARIOUS MATERIALS, INCLUDING FOR FOOD AND FEED, FROM MICROALGAE



INDICATIVE FUNDING: EUR 7 million

TYPE OF ACTION: Innovation Action – Demonstration Action

Due to their high productivity and their potential for avoiding competition with arable lands, microalgae are regarded as a valuable feedstock for biorefining operations. Microalgae are a potential source of molecules for a wide range of novel high-value products in different applications such as energy, fuel, food, feed, pharmaceutical and cosmetics. However, their current production scale and costs are holding back full-scale commercialisation steps. The main challenges regard: (i) efficiency of the cultivation method (in terms of growth rate and product synthesis rate); (ii) harvesting and separation of the microalgal biomass from the culture medium; (iii) pre-treatment of the algal biomass to release its components (mainly lipids, proteins, carbohydrates) for further conversion; and (iv) the further conversion steps themselves.

Growth rate and productivity of microalgae are affected by a number of factors such as availability of nutrients in the right amounts and compositions, presence of actinomycetes or other fungi, pH, light intensity and temperature. Open pond systems have relatively low capital costs and high scalability but may feature uneven mixing and nutrition conditions and are vulnerable to contamination and intrusion of alien species. Photobioreactor and closed-loop systems allow to better control growth conditions, but on the other hand require higher capital costs as well as higher maintenance costs.

Harvesting of microalgae is challenging and expensive due to small cell size and relatively low concentration. Several pre-treatment methods are employed, depending on the feedstock and desired products (chemical, enzymatic, physical, involving ionic liquids). The wide variability of microalgal feedstock composition and optimal growth conditions means that there is no one-fits-all solution; cultivation, harvesting and processing must be tailored to each species and targeted product.

The **specific challenge** is to scale up and lower the costs of microalgae cultivation combined with downstream processing towards commercial valorisation of marketable products.

EXPAND THE EXPLOITATION OF UNDER-UTILISED OR NEW FEEDSTOCK FOR THE BIO-BASED INDUSTRIES

BBI2019.S01.R1 – USE TREE SPECIES AND/OR VARIETIES TO CREATE NEW BIO-BASED VALUE CHAINS



INDICATIVE FUNDING: between EUR 2 million and EUR 5 million
TYPE OF ACTION: Research and Innovation Action

The forest-based sector has the potential to mobilise new biomass feedstock for the bio-based industry by using as yet underutilised tree biomass from both coniferous and non-coniferous species. Leaving the traditional applications of wood intact, the envisaged tree species and varieties could lay the groundwork for cultivating and using new feedstock for the bio-based industry.

The **specific challenge** is to identify as yet underutilised tree species and/or varieties that may have the largest impact in expanding and diversifying the forest-based feedstock for the bio-based industry.

BBI2019.S01.F1 – VALORISE THE ORGANIC FRACTION OF MUNICIPAL SOLID WASTE THROUGH AN INTEGRATED BIOREFINERY AT COMMERCIAL LEVEL



INDICATIVE FUNDING: maximum EUR 15 million
TYPE OF ACTION: Innovation Action – Flagship Action

The organic fraction of municipal solid waste (OFMSW) produced annually in the European Union is estimated at 88 million tonnes, rising to 96 million tonnes annually by 2020. On a global basis, cities produced about 1.3 billion tonnes of solid waste in 2012, of which a significant percentage was organic. This figure is expected to rise to 2.2 billion tonnes per year by 2025.

Containing mainly carbohydrates, proteins and lipids, OFMSW presents an important feedstock for biorefining to convert it into valuable compounds for applications in a variety of market segments. However, this precious feedstock is often perceived as a challenge for urban agendas due to its potential pressure on the environment and human health. Together with other waste streams, OFMSW is often used for energy recovery or sent to landfill. These disposal steps of OFMSW pre-empt exploiting its potential for valuable products achievable in cascading operations. Aerobic (composting) and anaerobic digestion processes on the OFMSW have been able to reduce this fraction going to landfill. However, these processes mainly result in low-value products such as compost, biogas and digestate.

Building on earlier projects on OFMSW, industry is ready to scale up the total value chain to first-of-a-kind biorefinery at commercial level. Successful operation at this level will start to realise a better exploitation of the potential of the OFMSW in Europe.

The **specific challenge** is to sustainably scale up the conversion of OFMSW into added-value.



Strategic Orientation 2 - PROCESS

OPTIMISE EFFICIENT PROCESSING FOR INTEGRATED BIOREFINERIES THROUGH R&D&I

The second strategic orientation aims to improve efficiency and sustainability of 'biorefining biomass into compounds for chemicals (including food and feed ingredients) and materials' and to develop new, breakthrough processes.

Focus areas for this strategic orientation are:

- Improve the effectiveness of pre-treatment steps.
- Further increase the efficiency of chemo- and bio-catalysis targeting better product quality, higher selectivity, higher output, lower cost and/or lower energy consumption.



PRE-TREATMENT

BBI2019.S02.R2 – DEVELOP BREAKTHROUGH TECHNOLOGIES TO IMPROVE THE COST-EFFECTIVENESS AND SUSTAINABILITY OF PRE-TREATMENT STEPS WITHIN BIOREFINING OPERATIONS



INDICATIVE FUNDING: between EUR 2 million and EUR 5 million
TYPE OF ACTION: Research and Innovation Action

The implementation of biorefining concepts at large scales is often affected by the need to achieve a balance between pre-treatment steps and the main conversion phase. The need to obtain high-purity fractions from the starting biomass to be fed into the following steps entails the use of harsh conditions in the pre-treatments. This entails high costs caused by: (i) energy, water and/or raw materials (e.g. chemicals, enzymes) requirements; (ii) complexity of operations and maintenance; (iii) an increase in waste and residues generation; and (iv) increased production of inhibitor compounds that may affect the overall yields of biorefining processes.

On the other hand, soft operating conditions in pre-treatments often result in a lower effectiveness in biomass fractionation, thus directly affecting the yields in the targeted products during conversion phases.

Several technologies based on chemical, biochemical, physical processes or a combination of these has shown the potential to provide valuable and sustainable solutions to substitute and/or efficiently integrate pre-treatment processes currently implemented.

The **specific challenge** is to reduce costs and improve sustainability associated with the pre-treatment steps of biomass feedstock while making it possible to achieve of sufficiently high yields in the targeted products in the subsequent conversion steps.

CONVERSION OF PRE-TREATED FEEDSTOCKS TO BIO-BASED CHEMICALS AND MATERIALS

BBI2019.S02.R3 – APPLY MICROORGANISMS AND/OR ENZYMES TO RESOLVE END-OF-LIFE ISSUES OF PLASTIC



INDICATIVE FUNDING: between EUR 2 million and EUR 5 million
TYPE OF ACTION: Research and Innovation Action

Microorganisms and/or enzymes can be applied to biodegrade/decompose plastic waste, one of the major threats to our ecosystem. This is a key focus area to apply the concept of the circular economy, besides changing human behaviour and production systems. The plastics industry is increasingly applying eco-design principles when producing plastics, ensuring an appropriate end of life by recycling, degrading or composting. Where these principles cannot be applied (any more), industry needs to establish different systems to close the circle of plastic material in the end-of-life phase. This will avoid plastic littering land and sea and reduce plastic waste diverted to landfill or incineration. Scientists have recently found that some microbes (bacteria and fungi) have evolved the ability to break down plastics. Other scientists have discovered plastic-eating bacteria that can break down PET.

Applying microorganisms and/or enzymes in the end-of-life phase of plastics could result in new feedstock for the bio-based industry. They may even be applied to all sorts of residual streams without any preliminary separation or sorting operations.

The **specific challenge** is to exploit the potential of microorganisms and/or enzymes to resolve end-of-life issues with plastics.

BBI2019.SO2.R4 – DEVELOP SURFACE OR BULK TREATMENTS FOR IMPROVED WOOD-BASED MATERIALS



INDICATIVE FUNDING: between EUR 2 million and EUR 5 million
TYPE OF ACTION: Research and Innovation Action

Wood-based materials find wide application in many market segments based on their macro-, micro- and nano-scale structures. Surface treatments, meaning altering the properties of the wood matrix at its skin or adding layers to it, are increasingly used to improve and expand the applicability of these materials. Equally important are treatments working on the whole volume of the material to improve bulk properties such as mechanical or thermal properties. The range of techniques used is huge.

Demand for treated wood-based material is increasing, stimulated by a widening of applications in practice. At the same time, market requirements are pushing towards improved performance, eco-design principles and reusability/recyclability at end-of-life phase.

The **specific challenge** is to develop new treatment methods for wood-based materials that improve the technological performance of the end product as well as the environmental impact at its end of life.

BBI2019.SO2.R5 – CONVERT PLANT OILS AND FATS INTO SAFE HIGH-ADDED-VALUE PRODUCTS FOR VARIOUS APPLICATIONS INCLUDING FOOD AND PERSONAL CARE



INDICATIVE FUNDING: between EUR 2 million and EUR 5 million
TYPE OF ACTION: Research and Innovation Action

Plant oils and fats are a promising feedstock for high-value products with new functionalities and properties for applications in food, personal care, cosmetics and in the chemical industry, among others. However, current processing conditions for refining the feedstock can cause undesired or toxic impurities and possibly also potentially carcinogenic compounds. Also, current refining processes have either a high energy demand or result in high oil losses, while the side streams bring in low value.

The **specific challenge** is to refine plant oils and fats at milder conditions, with high yields and delivering safe, high quality products.

BBI2019.SO2.F2 – APPLY TECHNOLOGICAL COMBINATIONS TO VALORISE ALL COMPONENTS OF BIOMASS FEEDSTOCK



INDICATIVE FUNDING: maximum EUR 20 million
TYPE OF ACTION: Innovation Action – Flagship Action

The chemical industry and other sectors apply combinations of technologies to improve operational effectiveness in relevant situations. These technologies include, for example, physico-chemical, electro-chemical, biochemical and thermo-chemical conversion technologies, combined in an innovative manner.

The concept of applying combined technologies, existing as well as newly emerging ones, may serve the bio-based industry sectors well in their pursuit to maximally valorise residual streams and unused or underutilised resources. This new way to convert biomass feedstock will result in the highest value and benefit for all concerned through partnership between the primary sectors and the emerging bio-based sector.

The **specific challenge** is to effectively apply new and innovative combinations of technologies in bio-based value chains to maximise valorisation of the feedstock.

DOWNSTREAM PROCESSING

BBI2019.SO2.R6 – IMPROVE BIOREFINERY OPERATIONS THROUGH PROCESS INTENSIFICATION AND NEW END PRODUCTS



INDICATIVE FUNDING: between EUR 2 million and EUR 5 million
TYPE OF ACTION: Research and Innovation Action

Biorefinery operations, processing specific types of biomass feedstock, yield a wide variety of products and fractions for further valorisation to applications such as food, feed and materials. However, existing pre-treatment steps often result in relatively high concentrations of impurities and inhibitors, impeding high yields of the desired products. In the case of fermentation processes, for example, downstream processing steps for separation and purification could easily amount to about 80% of the total fermentation costs.

Ongoing developments towards process intensification of the total plant operation in other industrial sectors offer interesting opportunities for the bio-based industry. For example, in the petrochemical, pharmaceutical and food processing industries, process intensification has led to re-sizing, higher efficiencies and safer operations with significant cost reductions. Similarly, process intensification could lower the costs of bio-based operations, including conversion and downstream processing.

The **specific challenge** is to improve biorefinery operations by applying process intensification concepts to lower operational costs, increase operational safety and achieve high yields of the desired products.

SYSTEM MODELLING

BBI2019.SO2.R7 – MODEL THE COMPOSITION OF BIO-BASED RESIDUAL STREAMS AND ITS EVOLUTION TO OPTIMISE ITS MANAGEMENT AND PROCESSING



INDICATIVE FUNDING: between EUR 2 million and EUR 5 million
TYPE OF ACTION: Research and Innovation Action

Variations in composition of bio-based residual streams are a major drawback for their effective management and processing. Better insight into their nature, composition and transformation reactions affecting their composition and energetic content is crucial for putting the right valorisation steps in place.

Modelling systems to track and chart impacts of relevant variables in managing and processing organic residual streams can provide the desired insight and help simulate value chains for valorisation.

The **specific challenge** is to increase insight into the changing quality of bulk organic residues with the aid of modelling systems.



Strategic Orientation 3 - PRODUCTS

DEVELOP INNOVATIVE BIO-BASED PRODUCTS FOR IDENTIFIED MARKET APPLICATIONS

The third strategic orientation aims to increase the applicability of high value-added bio-based products and avoid price competition with fossil-based products by pursuing advanced functionalities and unmatched performance.

Focus areas for this strategic orientation are:

- Bio-based materials that outperform fossil-based materials in comparable applications in the packaging, construction, agriculture, transportation, personal care and hygiene sectors.
- Breakthrough bio-based chemicals that have no fossil-based counterpart or industrial scale production.
- New bio-based chemicals and materials for high-value applications meeting all safety and regulatory requirements.
- Proteins and bio-based additives from plants, residual streams in the food production and other (waste) streams that are rich in protein and high-value molecules.
- Bio-based plastics that are biodegradable/compostable or suitable for recycling.

BIO-BASED PRODUCTS THAT OUTPERFORM FOSSIL-BASED COUNTERPARTS

BBI2019.SO3.R8 – DEVELOP SUSTAINABLE BIO-BASED MATERIALS FOR HIGH-VOLUME CONSUMER PRODUCTS



INDICATIVE FUNDING: between EUR 2 million and EUR 5 million
TYPE OF ACTION: Research and Innovation Action

Bio-based materials are promising alternatives to fossil-based plastic counterparts in several high-volume consumer applications: for example, they can be used for transparent films, in packaging and hygiene products, non-woven products, superabsorbent polymers and reinforced bio-composites. These bio-based materials can be made biocompostable, and/or biodegradable or recyclable if not degradable, lowering the environmental burden versus fossil-based alternatives.

The **specific challenge** is to provide bio-based materials for high-volume consumer products with a lower environmental footprint at end of life than their fossil-based plastic counterparts.

BBI2019.SO3.R9 – DEVELOP BIO-BASED FIBRES AND/OR FUNCTIONAL MOLECULES TO IMPROVE THE PERFORMANCE OF TEXTILE PRODUCTS



INDICATIVE FUNDING: between EUR 2 million and EUR 5 million
TYPE OF ACTION: Research and Innovation Action

The global consumption of textile fibres is increasing rapidly. This market has been growing with an annual rate of approximately 4%, reaching around 103 Mt in 2017. Synthetic and traditional natural bio-based fibres like cotton cannot meet the increasing demand in a context of limited resources. The production capacity of cotton, for example, is limited by sustainability constraints linked to resources consumption (land, water, fertilisers, pesticides, etc.).

Concurrently, consumers are increasingly demanding sustainable high-quality textiles: from renewable feedstock, sustainably produced, and with clear end-of-life qualities to support a circular economy. Innovative bio-based yarns and textiles can enter and compete in the established textile markets by meeting all of consumers' evolving sustainability requirements, combined with performance levels that exceed the state of the art.

In the same context, also bio-based additives for textiles have the potential to guarantee environmental sustainability while providing specific technical properties to meet consumers' demand. Moreover, bio-based functional molecules can represent valuable, non-hazardous alternatives for fossil-based additives currently used in textile applications.

The new bio-based fibres, as well as improved or tailor-made bio-based additives, can, for example, provide better mechanical or physical properties than the existing fibres in specific applications.

The **specific challenge** is to meet market requirements for new textile products outperforming the state of the art in terms of technical properties and sustainability aspects.

BBI2019.SO3.R10 – DEVELOP BIO-BASED HIGH-PERFORMANCE MATERIALS FOR VARIOUS AND DEMANDING APPLICATIONS



INDICATIVE FUNDING: between EUR 2 million and EUR 5 million
TYPE OF ACTION: Research and Innovation Action

High-performance applications often demand stable materials that, for example, can withstand temperature variations or are resistant to salt or to degradation by enzymes. Moreover, society increasingly demands products and applications that are sustainable and that can improve the environment in their entire life cycle (during their use and at their end of life).

The demand for high-performing, safe and sustainable bio-based materials exists today in market sectors as diverse as cosmetics, personal care, home care, packaging, coatings, resins and paints, additives, fibres, insulation, automotive, construction and others. The requirements for their functional capabilities and end of life may, however, differ.

The **specific challenge** is to identify and make available high-performance bio-based products for market applications that demand specific performance in use and in the end-of-life phase.

BBi2019.SO3.D3 – PRODUCE BIO-BASED FUNCTIONAL INGREDIENTS AND ADDITIVES FOR HIGH-END MARKETS



INDICATIVE FUNDING: between EUR 2 million and EUR 5 million
TYPE OF ACTION: Research and Innovation Action

Several market sectors utilise functional ingredients and additives to achieve the desired functionality and performance of their consumer products. Specialty, functional molecules are required to meet market requirements in sectors as diverse as cosmetics, flavours and fragrances, nutraceuticals, pharmaceuticals, medicine, beverages, food and feed.

In consumer products, especially those related to personal and home care, food and beverages, consumers are demanding functional natural products and ingredients. In industrial products, bio-based formulations open interesting opportunities for better performance and higher sustainability. In addition, bio-based value chains based on regionally sourced biomass feedstock offer interesting opportunities to meet requirements from consumers and industry in different market sectors and realise maximum benefits for the local society.

The **specific challenge** is to create integrated value chains with the appropriate business models to produce functional ingredients and additives.

BBi2019.SO3.D4 – DEMONSTRATE BIO-BASED PESTICIDES AND/OR BIOSTIMULANT AGENTS FOR SUSTAINABLE INCREASE IN AGRICULTURAL PRODUCTIVITY



INDICATIVE FUNDING: maximum EUR 7 million
TYPE OF ACTION: Innovation Action – Demonstration Action

Use of synthetic, fossil-based pesticides in the agriculture sector is under pressure. Consumer and environmental considerations have resulted in an increasing number of regulations limiting their applications. Moreover, increasing resistance to pesticides by various pests and diseases limits their commercial life-span. As a result, availability of efficient chemical solutions to certain agricultural pests is dwindling. These developments are threatening current and future agricultural production levels.

Bio-based solutions such as bio-based pesticides have the potential to decrease inputs of synthetic pesticides in the agricultural sector, while providing high yields in terms of pests' control. However, having a higher selectivity than currently used pesticides, they would require the combination of different solutions in integrated pest management approaches to obtain the total desired results. Also, extensive testing needs to prove they meet all requirements regarding risks, toxicity and pathogenicity. These factors have been holding back a wide use so far.

On the other hand, one of the biggest challenges of agriculture is to guarantee high crop yields and productivity, while matching increasingly stringent environmental regulations dealing with the agricultural sector. Moreover, the increasing world population and the related increased demand for sustainable food production systems are boosting the expansion of agricultural practices also in currently un- or under-exploited lands. Thus, the optimal use of such new arable lands calls for environmentally friendly products for plant health enhancement, such as biostimulants able to foster plant growth without 'overloading' the environment with potentially harmful chemical inputs.

The **specific challenge** is to apply sustainable solutions for effective pest control and/or biostimulation enabling a sustainable increase of agricultural productivity.

BBi2019.SO3.F3 – PRODUCE HIGH-PERFORMANCE BIO-BASED ALTERNATIVES TO HARMFUL PRODUCTS OR PROCESSES TO PROTECT AND ENHANCE HUMAN HEALTH AND THE ENVIRONMENT



INDICATIVE FUNDING: maximum EUR 12 million
TYPE OF ACTION: Innovation Action – Flagship Action

Industry and society in general are increasingly looking for bio-based, high-performance, non-toxic and fully biodegradable alternatives to conventional compounds, production processes or products that may be harmful to human health and/or the environment. Applications under scrutiny are, among others, related to the working environment in industrial settings and households, or operations close to freshwater reservoirs and marine environments.

The **specific challenge** is to increase the protection of human health and the environment in different application sectors with novel bio-based product alternatives.



Strategic Orientation 4 - MARKET UPTAKE

CREATE AND ACCELERATE THE MARKET-UPTAKE OF BIO-BASED PRODUCTS AND APPLICATIONS

The fourth strategic orientation aims to respond to the concerns of society about bio-based products by engaging in dialogue with societal and consumer groups on benefits and how potential risks are addressed and managed.

Focus areas for this strategic orientation are:

- Identify and propose solutions to remove (potential) hurdles to the increased use of the organic fraction of waste (specific co-products, side streams and residues from industrial and urban sources) for the bio-based industry.
- Increase and improve communication and dialogue with all stakeholders on the benefits and possible risks of new bio-based products. These include materials for applications with food contact (such as nutraceuticals and packaging materials), in the pharmaceutical sector, and possibly also in the construction, agriculture, transportation, personal care and hygiene sectors.
- Establish cooperation and partnerships with brand owners and consumer representatives to improve market access of sustainable bio-based products.

BBI2019.SO4.S1 – ASSIST BRAND OWNERS TO ‘SWITCH TO BIO-BASED’



INDICATIVE FUNDING: maximum EUR 1 million
TYPE OF ACTION: Coordination and Support Action

Brand owners are key stakeholders for implementing and accelerating the bio-based economy. As with any industrial investor, brand owners need harmonised legislation and stable policies to change business models and make investments.

Brand owners often perceive current market and regulatory situations as uncertain and are therefore reluctant to invest in a (new) bio-based product. These uncertainties relate to regulatory issues, feedstock quality and availability, results of life cycle assessments, bio-based product eco-design, functionalities and performance, standards, lack of knowledge, shortage of relevant skills, etc., and exist against the backdrop of consumers' increasing sustainability expectations about products and applications. Local and regional success stories may help change this perception and instil confidence in brand owners so that they make the switch to bio-based products.

The **specific challenge** is to: (i) respond appropriately to brand owners' perceptions of the potential risks of the 'switching to bio-based'; (ii) identify advantages, incentives, motivations and best practices that may drive brand owners to switch; and (iii) provide frameworks able to incentivise, motivate and drive brand owners to 'switch to bio-based'.

BBI2019.SO4.S2 – ESTABLISH METHODS AND COMMUNICATION FOR APPLYING MASS BALANCE PRINCIPLES TO ATTRIBUTE BIOMASS CO-FEEDSTOCK TO PRODUCTS



INDICATIVE FUNDING: maximum EUR 500 000
TYPE OF ACTION: Coordination and Support Action

The long-term objectives of the BBI JU Initiative include: (i) increasing production of bio-based chemicals and materials to 25% of the total in Europe by 2030; and (ii) contributing to the European target of a 20% reduction in greenhouse gas emissions by 2020.

A sustainable chemical industry plays a key role in achieving these long-term objectives. A roadmap to pursue the 25% chemicals and materials objective is being developed by a running BBI JU project (RoadToBio). To stay competitive, operators seek to cover the higher costs of processing biomass feedstock through a premium on the products they put on the market.

The chemical industry can convert pure biomass feedstock in dedicated processes into specific products, which can be characterised by a direct relationship between the amount of biomass feedstock and the 'bio-based content' of the products. This is a cumbersome undertaking with specific R&D needs and requiring potential investments to convert a chemical value chain into a dedicated bio-based operation.

The chemical industry can also use existing infrastructures to co-feed biomass feedstock with fossil-based feedstock and convert the mixed feedstock into various products that all contain some bio-based components. To set the basis for products' premia along this path, the industry needs to attribute the contribution of the verified biomass feedstock to each specific product. The chemical operators seek to do this by applying the principle of conservation of mass in analysing the conversion systems from input to output (mass balance). This approach can only be deployed and maintained if it is properly and transparently communicated and accepted by the customers.

The **specific challenge** is to arrive at a thorough understanding of the applicability of mass-balance systems to attribute biomass feedstock to products.

BBI2019.SO4.S3 – SHAPING THE BIO-BASED ECONOMY THROUGH A PARTICIPATORY APPROACH



INDICATIVE FUNDING: maximum EUR 2 million
TYPE OF ACTION: Coordination and Support Action

Since citizens are the end-consumers of bio-based products and services, they should have the opportunity to provide direct input into the design and implementation of the bio-based economy. This engagement should in particular play a role in the current period of change which may eventually result in people moving out of their comfort zone. Moving away from traditional and familiar products and services to different or new products and services that are bio-based or contain bio-based components may not be easy. The bio-based industry faces the challenge to fit the results of its value chains to the needs of civil society. The most efficient way to achieve this is to involve the public and provide them with opportunities to give input into the bio-based agenda. This opportunity expands the 'triple helix' of university, industry and government organisations to also include civil society organisations, and is a significant part of 'open science'.

Digitalisation offers these opportunities. Developments in information and communications technology (ICT) make it possible to share information and data that can be of significant value when designing the bio-based agenda and implementing it in society. Many citizens are already using their mobile phones to record and transmit events in their daily lives and surroundings, connecting actors in these networks. Increasingly, people are willing and motivated to participate in programmes that can improve their lives, those of others and the quality of the world they live in. Similarly, citizens may want to participate in providing input and monitoring implementation of the bio-based economy.

The **specific challenge** is to design the appropriate tools and system to empower citizens to participate in the bio-based economy.

BBI2019.SO4.S4 – EMPOWER SME CLUSTERS TO BRING SMES 'ACROSS THE VALLEY OF DEATH'



INDICATIVE FUNDING: maximum EUR 1.5 million
TYPE OF ACTION: Coordination and Support Action

The Bio-based Industries Consortium (BIC) sees as one of its major task as helping its members in obtaining investments for excellent projects. See for example BIC's report to increase awareness about the European financial instruments to support the development and growth of the bio-based economy and demonstrate how to use them.

In addition to project scalability and investment readiness, seeking investment from any source also involves preparing and presenting the project and its potential benefits for society and investors in an effective way. BIC is therefore seeking opportunities to train industry actors, in particular SMEs, to be successful in securing investment for excellent projects. The opportunity BIC would like to pursue is through empowering interested SME clusters at regional level (BIC members as well as non BIC members) to train their SME members and to reward them for excellent performance through a competition, with the regional winners moving on to a European final. SME clusters therefore need to be empowered to train their SME members and to adequately run the competition.

The **specific challenge** is to design the appropriate tools and system to build the capacity of SME clusters so that they can train SMEs to devise excellent projects that are scalable, investment ready and which convey these qualities to potential investors.



5 SYNERGIES WITH BBI JU



BioHorizon (NCPs)

National Contact Points for H2020 SC2 and KET-Biotechnology

(Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research, Bioeconomy and Biotechnology)

BioHorizon runs for four years (March 2015 – February 2019). The project consortium comprises 15 NCP institutions, under the coordination of the Institute of Fundamental Technological Research Polish Academy of Sciences (IPPT PAN POLAND).

The overall idea behind the BioHorizon project is to establish a pan-European learning platform for the transnational activities engaged in by SC2 and KET Biotechnology NCPs, and to create a network of NCPs capable of exploiting synergies with respect to distributed knowledge and collective development of training sessions and materials. This well established, active network will allow NCPs to learn from one another, increasing mutual understanding of the different approaches applied and requirements encountered in the daily work of an NCP.

The network will develop high quality services provided in turn to beneficiaries of funding under SC2 and KET-Biotechnology, namely researchers, representatives of industry and SMEs, and other stakeholders. The assistance provided by BioHorizon will surpass typical NCP services, with the network emphasising the importance of the complex and multidisciplinary aspects of Horizon 2020, including widening participation throughout the EU 28 and involving new stakeholders.

The members of the network require specific knowledge of a variety of aspects related to European research and innovation policy, such as the common agricultural policy (CAP), marine policy, the European Innovation Partnership (EIP), Joint Technology Initiatives (JTIs), the Standing Committee on Agricultural Research (SCAR), etc.

For further information: www.ncp-biohorizon.net

Follow us on Twitter: https://twitter.com/ncp_biohorizon and LinkedIn: <https://www.linkedin.com/groups/8426442/>





EASME (Executive Agency for SMEs)

The Executive Agency for Small and Medium-sized Enterprises (EASME) is an Executive Agency of the European Commission located in Brussels.

It is responsible for managing specific programmes in the fields of business support targeting SMEs but also energy, environment and maritime research & innovation. Its goal is to help create a more competitive and resource-efficient European economy based on knowledge and innovation.

The original mandate of the Agency was extended several times since its foundation in 2003 and from energy it evolved to cross-cutting support to the innovation, competitiveness and internationalization of European SMEs. As a consequence, the original name of the agency changed to reflect the evolving mandate and from the original name Intelligent Energy Executive Agency (IEEA), it was renamed the European Agency for Competitiveness and Innovation (EACI) in 2007 and finally becoming EASME in 2014.

The Project

Today the Agency is responsible for the implementation of the following programmes:

- Most of COSME, the EU programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (SMEs), including Enterprise Europe Network (EEN) and Your Europe Business;
- Part of Horizon 2020, the EU Framework Programme for Research and Innovation, and in particular:
 - Innovation in SMEs (including the European IPR Helpdesks, INNOVACESS and Peer learning for innovation agencies)
 - The SME instrument
 - Fast Track to Innovation (FTI) Pilot
 - INNOSUP including the SME Innovation Associate pilot action
 - The Sustainable Industry Low Carbon Scheme (SILC II)
 - Part of the Leadership in Enabling and Industrial Technologies
 - The Energy Efficiency part of the Societal Challenge 'Secure, Clean and Efficient Energy';
- The Societal Challenge 'Climate action, Environment, Resource Efficiency and Raw Materials'
- Part of the EU programme for the Environment and Climate action (LIFE)
- Part of the European Maritime and Fisheries Fund (EMFF)
- The legacy of the Intelligent Energy – Europe programme and the Eco-innovation initiative
- The organization of the EU Sustainable Energy Week (EUSEW).

For further information: www.ec.europa.eu/easme

EEN (Enterprise Europe Network) - Sector Group Environment

Launched in 2008, the Enterprise Europe Network (EEN) is an initiative of the European Commission, designed to help SMEs innovate and succeed by providing a local gateway to global business opportunities.

- Mission: to help European businesses grow and innovate by providing the local support and advice they need to nurture their international ambitions, find business partners and access funding and finance.
- Vision: to help more of Europe's ambitious, growth-oriented SMEs to succeed in bringing innovation to the marketplace on an international scale.

The Enterprise Europe Network brings together around 600 business support organisations from more than 65 countries. The member organisations include chambers of commerce and industry, technology centres, research institutes and development agencies. Enterprise Europe Network local branches offer the following free of charge services:

- Innovation support services
- Cross-border partnering activities for business cooperation, technology transfer or Research & Innovation projects
- Access to finance
- Advice on EU law and standards
- Support on access to EU research funding
- Advice on Intellectual Property Rights (IPRs)
- Speak up on EU law

Learn more on EEN services and find out your local contact point: <https://een.ec.europa.eu>

Sector Group Environment

The Sector Group Environment of the Enterprise Europe Network gathers approximately 50 advisors that team up to provide green businesses with customized support. They meet twice a year to exchange on the environmental-related challenges faced by companies and to accelerate business, technology and research cooperation in this key growing sector.

The sector group Environment organize brokerage events, company missions, conferences and workshops specifically targeting the environmental sector. These activities bring together enterprises, science and technology institutes and public bodies active in the environmental field.

For further information: <https://een.ec.europa.eu/news/our-environment-experts-your-service>



A.SPIRE

Launched in 2013, A.SPIRE is the European association that is committed to manage and implement the SPIRE contractual Public-Private Partnership. SPIRE brings together the cement, ceramics, chemicals, engineering, minerals and ores, non-ferrous metals, steel and water sectors, several being world-leading sectors operating from Europe. It represents innovative process industries, which makes up 20% of the total European manufacturing sector in turnover and 7% of all employment in Europe, as well as more than 150 industrial and research stakeholders from over 20 European countries.

The mission of A.SPIRE is to ensure the development of enabling technologies and best practices along all the stages of large scale existing value chain productions, that will contribute to a resource efficient process industry.

SPIRE 2050 Vision: A new Value Proposition for Horizon Europe and Beyond

The extent and the pace of the transitions that our society requires over the next decades are pushing the limits of human knowledge and our ability to deploy innovations. The challenges we face include climate change, growing resource scarcity and urbanisation, and the growing market demand for customised products, services and solutions that also ensure low health and environmental impacts, responsible sourcing and high-quality control.

In all these significant challenges, the European Process Industries and their research partners also see innovation and business opportunities. With this in mind SPIRE believes it is time to boost the transitions and has formulated a new Vision 2050 to guide its work into the EU's Horizon Europe programme and beyond.

SPIRE Key Components

SPIRE has implemented its research and innovation roadmap through six Key Components:

- Feed: Increased energy and resource efficiency through better preparation and product mix of raw materials, higher levels of alternative and renewable feedstock (including waste and waste water), as well as better managing increased quality variations in material resources.
- Process: Solutions for more efficient processing and energy systems for the process industry, including industrial symbiosis.
- Applications: New processes to produce materials for market applications that boost energy and resource efficiency up and down the value chain.
- Waste2Resource: Valorisation and re-use of waste streams within and across sectors, including recycling of post-consumer waste streams and new business models for eco-innovation.
- Horizontal: underpinning the accelerated deployment of the R&D&I opportunities identified within SPIRE through sustainability evaluation tools and skills and education programmes as well as enhance the sharing of knowledge and best practices.
- Outreach: Reach out to the process industry, policy makers and citizens to support the realisation of impact through awareness, stimulating societal responsible behaviour.

More than 89 projects cover different focus areas including integrated process control, flexible feedstock, improved downstream processing of mixtures, cross-sectorial sustainability assessment, process intensification, energy and resource management systems, and more.

For further information and to learn more about our new SPIRE 2050, visit our website at www.spire2030.eu



EuropaBio (European Association for Bioindustries)

EuropaBio, the European Association for Bioindustries, is the recognised voice of the European biotech community championing world-class solutions for society's challenges. EuropaBio and its members are committed to the socially responsible use of biotechnology to improve quality of life, to prevent, diagnose, treat and cure diseases, to improve the quality and quantity of food and feedstuffs and to move towards a biobased and zero-waste economy. EuropaBio represents 79 corporate and associate members and bio-regions, and 15 national biotechnology associations which in turn represent over 1800 biotech SMEs.

The leading voice for biotech in Europe

No other industrial sector enhances quality of life, knowledge, innovation, productivity and environmental protection like biotechnology, while also being beneficial for the economy. From new drugs that can address unmet medical needs and fight epidemics and rare diseases, to industrial processes that use renewable feedstocks instead of crude oil, to drought-resistant crops that allow farmers around the world to feed more people under ever-harsher climatic conditions, promoting and investing in biotech pays economic, social and environmental dividends.

For such reasons, biotechnology has been a cornerstone of Europe's competitiveness in terms of research and innovation as well as in terms of industrial growth, number of jobs and new companies created in Member States for numerous years. EuropaBio's purpose is to ensure this will continue, and that Europe not only remains the world's biotech research hub, but that European citizens also reap the benefits of innovative biotech products derived from that research.

Driving and sharing industry insights & fostering biotech awareness

What is required firstly to realise biotech's potential for and in Europe is sound policy that supports innovation and entrepreneurial risk-taking, together with regulatory structures that reward long-term investment in research and development over short-term gain and quick consumption. EuropaBio keeps engaged in developing key recommendations around research and development, assessment and approval, and market access, for biotech to unfold its full potential.

Secondly, familiarisation of all parts of society with biotech and how it is helping to create a healthier, greener, more productive, and more sustainable economy, is paramount. For example, EuropaBio's report highlights the fundamental role of Industrial Biotechnology in delivering solutions for a large majority of the UN Sustainable Development Goals. To this end EuropaBio showcases the benefits of biotechnology through a wide range of activities and events in the three specific sectors (healthcare, agriculture, and industry) as well as a series of cross-sectoral initiatives such as:

- The European Biotech Week
- The Most Innovative European Biotech SME Awards
- The European Forum on Industrial Biotechnology and the Biobased Economy

For further information: www.europabio.org

COPA-COGECA

COPA - Committee of Professional Agricultural Organisations in the European Union and

COGECA - General Confederation of Agricultural Cooperatives in the European Union

“The voice of 22 million European farmers and their cooperatives”

Copa and Cogeca are the European umbrella organisations representing the united voice of farmers and agri-cooperatives in the EU. Together, Copa and Cogeca ensure that EU agriculture is sustainable, innovative and competitive, guaranteeing food security to half a billion people throughout Europe. Copa represents over 22 million farmers and their family members whilst Cogeca represents the interests of 22,000 agricultural cooperatives. Jointly, they have almost 70 member organisations from the EU Member States and 34 Partner Organisations.

Mission

Our policy advisers and staff members work together with our members in order to keep EU farmers well informed and their positions heard and well represented in Brussels and beyond.

Copa and Cogeca aim to be a front runner in the discussions with EU decision-makers, putting all its in-house and member expertise into achieving farmer and agri-cooperatives friendly policies, therefore also actively engaging in talks with our respective counterparts across the world and other stakeholders.

Research and innovation in agriculture have always been and will remain high on our agenda and promoting high-quality EU agriculture products also remains one of Copa and Cogeca's top priorities.

How does Copa and Cogeca work?

The joint Copa and Cogeca Secretariat is headed by Copa-Cogeca Secretary-General Pekka Pesonen (FI). There are 50 staff in the Brussels office operating in 6 working languages (EN, FR, ES, DE, IT, PL) and working in four teams, among which the Secretary General's team; Commodities and Trade and General Affairs.

Copa and Cogeca has 45 Working Parties, dealing with market and policy developments and covering 25 agricultural sectors. The Working Parties prepare joint Copa and Cogeca positions on a wide range of, often very technical and key topics, such as research & innovation, rural development, bioeconomy, environment (climate change, soil, water, waste), organic farming, animal health & welfare or animal products, just to mention a few.

In addition, Copa and Cogeca supports a growing number of great and highly innovative projects developed by our members across the EU.

Copa and Cogeca are also very active in media and in organising events, workshops, seminars and business forums, such as for Green Week, the Congress of European farmers and diverse European Parliament events.

For further information: www.copa-cogeca.eu

EUBA (European Bioeconomy Alliance)

The European Bioeconomy Alliance is a unique cross sector alliance dedicated to mainstreaming and realising the potential of the bioeconomy in Europe. Bringing together the Alliance members are:

- The production and use of renewable resources as feedstock for making innovative, value-added everyday products and materials;
- The commitment to maximise the unused potential of European renewable resources to encourage the production of bio-based products and materials “Made in Europe”;
- Resource efficiency and sustainability as driving business principles.

EUBA Mission

The Alliance’s mission is to lead the transition towards a post-petroleum society. Recognising that the bioeconomy is still a relatively new political, economic and social concept, the Alliance will strive to:

- Raise EU, national and regional leaders’ awareness on the benefits of the bioeconomy and bio-based industries;
- Make the bioeconomy mainstream above and beyond the research and innovation policy;
- Mobilise and engage stakeholders to realise the European bioeconomy potential;
- Advocate for a coherent, flexible and stimulating policy environment for bio-based solutions.

EUBA Objectives

- Make bioeconomy a pan-European political priority;
- Mobilise opinion leaders with a view to mainstreaming bioeconomy as a viable and accepted alternative;
- Create a level playing field for bio-based products and materials.

EUBA Members

- BIC – Bio-based Industries Consortium
- CEFS – European Association of Sugar Producers
- CEPF – Confederation of European Forest Owners
- CEPI – Confederation of European Paper Industries
- COPA-COGECA – European Farmers and European Agri-Cooperatives
- ePURE – European Renewable Ethanol Producers Association
- EuropaBio – The European Association for Bioindustries
- EUBP – European Bioplastics
- FEDIOL – The European Vegetable Oil and Protein Meal Industry
- FTP – Forest-based Sector Technology Platform
- PFP – Primary Food Processors
- Starch Europe – European Starch Industry Association

For further information: www.bioeconomyalliance.eu



EBRD (European Bank for Reconstruction and Development)

The European Bank for Reconstruction and Development (EBRD) is an international financial institution with a mandate to promote transition to well-functioning market economies, by financing projects and providing technical and policy support in 38 countries in Central-Eastern Europe, Central Asia and the Mediterranean region – including 12 EU Member States.

EBRD activities are characterised by rapid project scoping, approval and delivery, moulded around a business-oriented banking structure.

The EBRD can offer the following financing solutions:

- Debt at various levels of seniority as loans, with syndication of additional lending from partner banks where appropriate, or as bond purchases. Usually, the EBRD directly provides loans of €5m and above, although innovative projects with smaller financing needs are also considered. Average loan tenors are in the range of 5-7 years;
- Equity and quasi-equity instruments are similarly available for larger-scale projects;
- Smaller-scale lending or leasing via local partner financial institutions, typically up to €1m;
- Guarantees can be arranged in the form of trade facilitation for import/export operations, as pure guarantees or advanced trade finance;
- Hybrid structures, tailored to the circumstances of each client, are also available.

The EBRD has a specific mandate to promote Green Economy Transition in its countries of operation, and can offer client-specific support to prepare and implement “green” projects:

- Project scoping, such as technical feasibility studies, market analyses, assessments of business/ investment plans;
- Project management, implementation support including for procurement or for monitoring and verification of technical performance, company-level training and capacity building;
- Technical assistance, e.g. support for R&D activities and services, assistance for developing and monetising carbon emission credits, assistance in applying for additional support under co-financing schemes managed by other organisations;
- Concessional or grant co-financing, which can occasionally and selectively be mobilised to complement the EBRD finance. Its deployment can be focused on technology transfer or innovation: for example, through its FINTECC programme, the EBRD can provide technical and grant support to companies investing into innovative, green technologies in the context of an EBRD investment, with the aim of increasing market penetration of advanced environmental/ climate technologies and supporting R&D and innovation activities.

For further information: www.ebrd.com and www.ebrd.com/fintecc

6 BBI JU FOUNDING PARTNERS



BIO-BASED INDUSTRIES CONSORTIUM (BIC)

The Bio-based Industries Consortium is the leading European private sector association on the circular bioeconomy. BIC represents the private sector in a public-private partnership (PPP) with the EU, represented by the European Commission, known as the Bio-based Industries Joint Undertaking (BBI JU), established in June 2014 as one of the pillars of the EU's Bioeconomy Strategy.

The BBI JU is driven by the Vision for a circular bio-society and the Strategic Innovation and Research Agenda (SIRA) developed by the industry.

BIC's Vision is to accelerate innovation and market uptake of bio-based products and to position Europe as the global hub for bio-based industrial investment and the international reference point for the circular bioeconomy.

BIC's mission is to build innovative bio-based value chains by developing new biorefining technologies, optimising feedstock use, including residual and side streams while creating a favourable business and policy climate to accelerate market uptake of bio-based products.

The SIRA focuses on 4 strategic orientations:

- Foster a sustainable biomass feedstock supply to feed both existing and new value chains.
- Optimise efficient processing for integrated biorefineries through R&D&I.
- Develop innovative bio-based products for identified market applications.
- Create and accelerate market uptake of bio-based products and applications.

BIC members put forward ideas for research topics and demonstration and flagship projects for the BBI JU Annual Work Plan.

BIC is host to a unique mix of sectors including agriculture, food and feed, aquaculture and marine, chemicals and materials, forestry and pulp & paper, technology providers and beyond. It has more than 200 industry members which include large enterprises, SMEs and SME Clusters, RTOs, universities, technology platforms and associations spread across Europe. BIC brings together an authoritative pool of cross-sector and multi-disciplinary expertise of the bio-based industries. Any interested stakeholders along the bio-based value chain may apply for membership.

2.7 billion EUR or 75% of the total €3.7 billion BBI JU budget is being invested by BIC members from 2014-2020. Their financial contribution will support the large-scale commercialisation of high-quality bio-based products, through investment in innovative manufacturing facilities and processes, as well as in biorefining research and demonstration projects.

For further information: www.biconsortium.eu



European Union (EU)

The European Union, through the European Commission, represents the public sector in the BBI JU initiative. Within the BBI JU the European Commission promotes its citizens' overall interests.

The Commission is organised into policy departments, known as Directorates-General (DGs), which are responsible for different policy areas. DGs develop, implement and manage EU policy, law, and funding programmes. Three DGs are represented in the governance of BBI JU.

Directorate-General for Research and Innovation (DG RTD)

The Directorate-General for Research and Innovation is responsible for EU policy on research, science and innovation, with a view to help create growth and jobs and tackle the European's biggest societal challenges. The DG RTD defines and implements European Research and Innovation (R&I) policy with a view to achieving the goals of the Europe 2020 strategy and its key flagship initiative, the Innovation Union. To do so, the DG contributes to the European Semester by analysing national R&I policies, by assessing their strengths and weaknesses, and by formulating country specific recommendations where necessary. It monitors and contributes to the realisation of the Innovation Union flagship initiative and the completion of the European Research Area. It funds excellent Research and Innovation through Framework Programmes taking a strategic programming approach.

Directorate-General for Agriculture and Rural Development (DG AGRI)

The Directorate-General for Agriculture and Rural Development is responsible for EU policy on agriculture and rural development and deals with all aspects of the common agricultural policy (CAP). This DG has the following objectives:

- helping farmers to produce sufficient quantities of safe food, produced respecting EU norms on sustainability, environmental rules, animal welfare, traceability, etc.;
- providing farm businesses with support systems to help stabilise their incomes in the face of less predictable production conditions;
- facilitating investment in a sustainable, modern farming sector;
- maintaining viable rural communities, with diverse economies;
- creating and maintaining jobs throughout the food chain.

Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROWTH)

The Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs is the European Commission service responsible for:

- completing the Internal Market for goods and services;
- helping turn the EU into a smart, sustainable, and inclusive economy by implementing the industrial and sectorial policies of the flagship Europe 2020 initiative;
- fostering entrepreneurship and growth by reducing the administrative burden on small businesses; facilitating access to funding for small and medium-sized enterprises (SMEs); and supporting access to global markets for EU companies. All of these actions are encapsulated in the Small Business Act;
- generating policy on the protection and enforcement of industrial property rights, coordinating the EU position and negotiations in the international intellectual property rights (IPR) system, and assisting innovators on how to effectively use IP rights;
- delivering the EU's space policy via the two large-scale programmes Copernicus (European Earth observation satellite system) and Galileo (European global navigation satellite system), as well research actions to spur technological innovation and economic growth.

For further information: www.ec.europa.eu



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