

# Access to EU Financial Instruments

suitable for the implementation of large Bio-based Industry investments





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*Prepared by:*



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# ABBREVIATIONS AND ACRONYMS

BBI JU	Bio-based Industries Joint Undertaking
BIC	Bio-based Industries Consortium
CCS	Carbon Capture and Storage
CF	Cohesion Fund
CSA	Coordination and Support Actions
EAFRD	European Agricultural Fund for Rural Development
EaSI	EU Programme for Employment and Social Innovation
EBRD	European Bank for Reconstruction and Development
EC/EU	European Commission/European Union
EFSI	European Fund for Strategic Investments
EIAH	European Investment Advisory Hub
EIB EIF	European Investment Bank/European Investment Fund
EIPP	European Investment Project Portal
EMFF	European Maritime and Fisheries Fund
ERDF	European Regional Development Fund
ESF	European Social Fund
ESIF	European Structural and Investment Fund
ETS	Emissions Trading System
FOAK	First-of-a-kind
GEFF	Green Economy Financing Facilities
GET	Green Economy Transition

H2020	Horizon 2020 – EU Framework Programme for Research and Innovation
IA	Innovation Actions
IIW	Infrastructure and Innovation Window
InnovFin	EU Finance for Innovators
Large Cap	Large Market Capitalisation
LGF	Loan Guarantee Facility
MCF	Microcellulose Fibre
MidCap	Middle Market Capitalisation
NER	New Entrants Reserve
PPP	Public-private Partnership
R&D/R&I	Research & Demonstration/Research & Innovation
RIA	Research and Innovation Actions
RIS3	Regional Smart Specialisation Strategy
RTO	Research and Technology Organisation
S2E	Stairway to Excellence
SBP	Sugar Beet Pulp
SME	Small and Medium-sized Enterprise
SMEW	SME Window
SPV	Special Purpose Vehicle
SWOT	Strengths Weaknesses Opportunities Threats
RCR	Risk Capital Resources
RSFF	Risk Sharing Finance Facility
TIP	Thematic Investment Platform
TRL	Technology Readiness Level





## FOREWORD

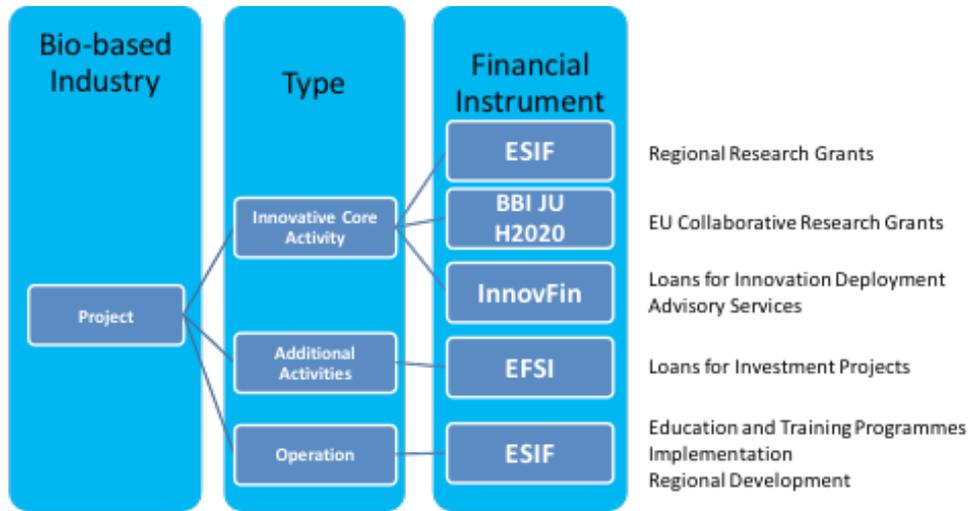
The Bio-based Industries Consortium (BIC) is a non-profit organisation set up in Brussels in 2012. BIC members span the entire bio-based value chain and include large industries, small and medium-sized enterprises (SMEs), regional clusters, universities, research and technology organisations, European trade associations and European Technology Platforms. BIC represents the private sector in the Bio-based Industries Joint Undertaking (BBI JU), a public-private partnership between BIC and the European Commission (EC), established in June 2014 as one of the pillars of the EU Bioeconomy Strategy.

In BBI JU, BIC supports projects within the Horizon 2020 (H2020) programme through specific calls for proposal. BIC also offers its members information about access to funding, as well as loans and grants from EU institutions such as the European Commission, the European Investment Bank Group (EIB), the regions and the European Bank for Reconstruction and Development (EBRD).

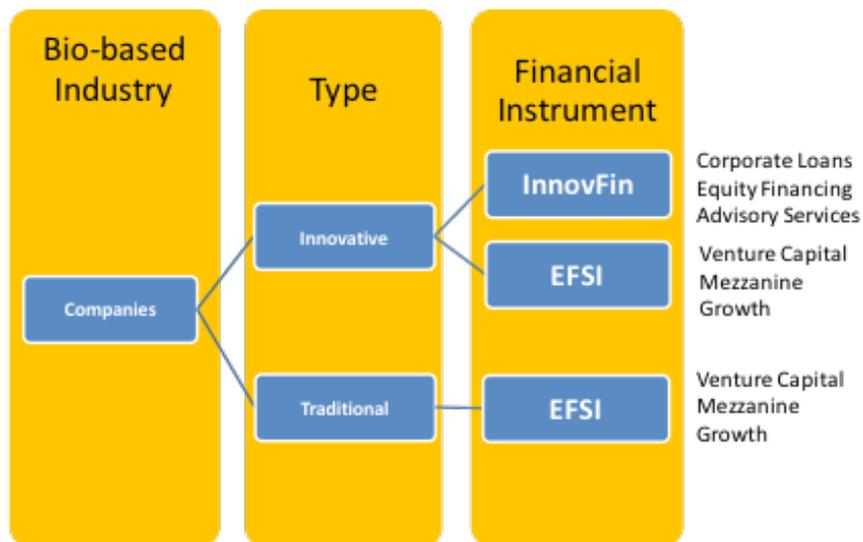
This report provides BIC stakeholders with a detailed overview of the financing opportunities promoted by the European Union to support the development and growth of the European bioeconomy and aims to:

- Increase awareness of EU financial instruments to the bio-based industry
- Demonstrate how different financial instruments can be used and combined

EU financial instruments support project development and corporate growth, as shown in the two diagrams below.



EBRD has a range of programmes which can support all of the activities above.



EBRD also offers equity and venture capital financing

Suitable instruments depend on the type of investment and activity requiring funding. EU financial instruments discussed in this report include the European Structural and Investment Fund (ESIF), the research and innovation programme Horizon 2020 (H2020), the European Fund for Strategic Investments (EFSI), and the EIB’s EU Finance for Innovators programme (InnovFin). This report also presents the EBRD as another potential source for project and corporate financing, as it offers a range of financing products (loans, equity, guarantees and hybrid structures) which can be customised. EBRD’s products can be complemented by technical, financial and policy support as well as donor-provided concessional or grant co-financing, if appropriate.

## **FINANCIAL INSTRUMENTS FOR PROJECT DEVELOPMENT**

Innovative core activities of bio-based projects can be funded by the H2020 programme through a) grants, where BBI JU plays a key role in project management or b) debts and equity financing via the EIB's InnovFin financial programme. Some European regions provide financial support to projects through Structural Funds and their implementation programs. Traditional activities which are not innovation-related (e.g. construction works, equipment, accessibility) can be financed through instruments made available by the Juncker Plan (i.e. EFSI). Debt and financing support is available at the EIB or via financial intermediaries.

Education and training activities are often supported by European regions, whose resources are made available by Structural Funds. Some European regions are also using Structural Funds to guarantee debt instruments, which complement investments in both traditional and innovative activities. Cumulative use of these instruments is subject to limitations, which are investigated on a case-by-case basis.

## **FINANCIAL INSTRUMENTS FOR CORPORATE GROWTH**

For corporate financing, companies may use financial instruments based on forms of debts or equity. InnovFin and EFSI offer products suitable for innovative companies in the bio-based sector. In general, equity and debt instruments may be combined with grants contracted to the same company. This report provides more detailed information on how to do this.

Instruments may be blended together, so one project may be able to access several financial instruments, depending on the type of activity. State aid rules, transparency and any measures to safeguard the market from possible distortions naturally apply. Readers and investors are invited to read through the report to gain an understanding of the funding opportunities available.



# 1 INTRODUCTION

The **Bio-based Industries Consortium** (BIC) established the **Bio-based Industries Joint Undertaking** (BBI JU) with the European Commission (EC) in June 2014. A public-private partnership (PPP), BBI JU implements the 'Bio-based Industries Initiative', which supports the transformation of renewable, natural resources into innovative bio-based products for a variety of applications. For more details on BBI JU, please see Chapter 2.

BIC presents its members with opportunities through BBI calls for proposals to keep investment in European bio-based activities. Moreover, BIC helps members gain access to financial instruments beyond BBI JU, such as loans and grants from EU institutions e.g. the EC, the European Investment Bank Group (EIB Group), and the European Bank for Reconstruction and Development (EBRD).

## 1.1 BACKGROUND AND RATIONALE

A BIC report<sup>1</sup> in 2014 outlined the funding opportunities made available by **European Structural and Investment Funds** (ESIF) and **Horizon 2020** (H2020) funds to projects in the Bio-based industries. In 2015, the European Commission launched the Investment Plan for Europe (also known as the Juncker Plan) which has three objectives: 1/ Remove obstacles to investment 2/ Provide visibility and technical assistance to investment projects and 3/ Make smarter use of financial resources.

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<sup>1</sup> Combining BBI (H2020) and European Structural and Investment Funds (ESIF) to deploy the European bioeconomy - Guiding principles', Brussels, November 2014, Bio-based Industries Consortium

The Juncker plan is made up of three pillars:

1. First, the **European Fund for Strategic Investments** (EFSI), which provides an EU guarantee to mobilise private investment. The Commission works together with its strategic partner, the European Investment Bank (EIB) Group
2. Second, the **European Investment Advisory Hub** (EIAH) and the **European Investment Project Portal** (EIPP), which provide technical assistance and greater visibility of investment opportunities, thereby helping proposed investment projects become a reality. The Hub is a joint venture with the EIB Group
3. Third, improving the business environment by removing regulatory barriers to investment, nationally and at EU level.

With input from BIC and its industry members, the EIB published a study<sup>2</sup> on 'Access-to-Finance' in June 2017, commissioned to EY. The study analyses EU bio-based and blue economy projects, evaluating the potential for dedicated financial instruments and other policy tools at the EU and Member State level, which can catalyse private sector investments. The key findings are:

- Bio-based industries' projects face issues accessing private capital
- Regulation and market demand framework conditions are perceived as the most important drivers and incentives but also present the biggest risks and challenges for bio-based industries project promoters as well as financial market participants to invest in the bioeconomy
- The main funding gaps exist in (i) bio-based projects scaling up from pilot to demonstration projects and (ii) particularly in bio-based industries, moving from demonstration to flagship/first-of-a-kind (FOAK) and industrial-scale projects
- Financial market participants are attracted by the growth potential of the bioeconomy, but due to its high perceived risks and information asymmetries, identify the two funding gaps above
- Existing public financial instruments are utilised but their catalytic impact could be further enhanced
- Policy actions and/or new or modified public financial instruments could de-risk bio-based investments and catalyse (crowd-in) private capital

Consequently, the study outlines four recommendations:

- Establish an effective, stable and supportive regulatory framework for bio-based industries at the EU level, which is essential
- Further reinforce awareness about InnovFin and the EFSI, which can match the funding needs of certain bio-based industry projects
- Develop a new EU risk-sharing financial instrument dedicated to the bio-based industries, potentially taking the form of a thematic investment platform that can meet the funding needs of bioeconomy projects and mobilise private capital
- Explore the creation of an EU-wide contact, information exchange and knowledge sharing platform or other channels to facilitate relationships between bio-based industry project promoters, industry experts, public authorities and financial market participants active or seeking to become active in the bioeconomy

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2 'Study on Access-to-Finance Conditions for Investments in Bio-Based Industries and the Blue Economy', Luxembourg, June 2017, EIB

The EIB's report outlines the opportunities currently available in the European Union to support investment in bio-based projects. An announcement by the EIB and the EC about offering fully integrated Access-to-Finance solutions for innovators in the bioeconomy and circular economy sectors is currently pending.

## **1.2 OBJECTIVES AND OVERVIEW OF THIS REPORT**

This report aims to increase awareness of the financing opportunities promoted by the European Union to support the development and growth of the European bio-based sector, focusing particularly on demonstration and flagship projects. BBI JU calls see project proposals receiving excellent evaluation scores, but are often not granted due to budget limitations. This report outlines the opportunities available for financing these activities, allowing companies to pursue their investments in Europe.

Moreover, this report reviews and updates information published in BIC's 2014 report and explores possible synergies with ESIF, as well as other finance instruments offered by the EIB, the European Investment Fund (EIF) and their financial intermediaries.

A range of financial instruments are discussed, including those made available by the EFSI through the EIB and the EIF, as well as financial instruments connected to the H2020 – InnovFin instruments. Regional financing sources are also outlined.





## 2 THE BIO-BASED INDUSTRIES CONSORTIUM

This section presents the **Bio-based Industries Consortium** (BIC), the **Bio-based Industries Joint Undertaking** (BBI JU) and the projects they support within the Horizon 2020 (H2020) framework, through specific calls for proposals. While BIC focuses on large-scale innovative projects with a high degree of maturity, demonstration and flagship projects are also discussed. These are seen as prime candidates for co-financing by investors and promoters, alongside funding from BBI JU.

### 2.1 THE BIO-BASED INDUSTRIES CONSORTIUM (BIC)

Set up in Brussels in 2012, BIC is a non-profit organisation whose members span the entire bio-based value chain, including large companies, small and medium-sized enterprises (SMEs), regional clusters, universities, research and technology organisations (RTOs), European trade associations and European Technology Platforms. Interested bio-based stakeholders are encouraged apply for membership.

BIC wants to accelerate market uptake of innovative bio-based products and position Europe as a world-leading bio-based economy, by focusing on four key areas:

- Feedstock – Fostering a sustainable biomass supply with increased productivity and building new supply chains
- Processing – Optimising processing through R&D, demonstrating efficiency and economic viability of large-scale demonstration and flagship projects, as well as biorefineries
- Products – Developing innovative bio-based products for targeted market applications
- Market uptake – Accelerating market uptake of bio-based products and applications by contributing to an optimal policy framework and addressing societal needs

BIC represents the private sector in BBI JU<sup>1</sup>, its **public-private partnership** (PPP) with the EC, which has a €3.7 billion budget. Almost 75% of BBI JU's budget comes from BIC members – €2.7 billion from 2014-2020. Members' financial contributions support large-scale commercialisation of high-quality bio-based products through investment in manufacturing facilities and processes, as well as biorefining research and demonstration projects.

### 2.1.1 Vision and Strategy

BIC's vision is for basic building blocks for chemicals, materials and advanced biofuels to be derived from biomaterials, resource efficiency to be boosted and economic growth to become decoupled from environmental impact.

To create a society less dependent on fossil-based materials, BIC and its members are building an economy based on:

- Local sourcing
- Local production
- Job creation
- Rural and coastal development
- Sustainability
- Resource efficiency

BIC wants to build innovative bio-based value chains by developing new biorefining technologies, optimising feedstock use and creating a favourable business and policy climate to accelerate acceptance of bio-based products.

## 2.2 THE BIO-BASED INDUSTRIES JOINT UNDERTAKING (BBI JU)

The Bio-based Industries Joint Undertaking (BBI JU) is a public-private partnership established between the EC and BIC with an objective to bring together all relevant stakeholders for establishing innovative bio-based industries as a competitive sector in Europe. BBI JU is responsible for the implementation of open calls for proposals, launched on a yearly basis. These calls are operated under the H2020 rules, on the principle of openness, transparency and excellence.

## 2.3 PROJECT CLASSIFICATION

Based on project aims and their Technology Readiness Level <sup>2</sup>, development and deployment actions in BBI JU calls are grouped in two categories (Figure 2.1): Research and Innovation Actions (RIA) and Innovation Actions (IA). IA is further subdivided into Demonstration and Flagship actions.

The calls also contain non-technological actions as Coordination and Support Actions (CSA).

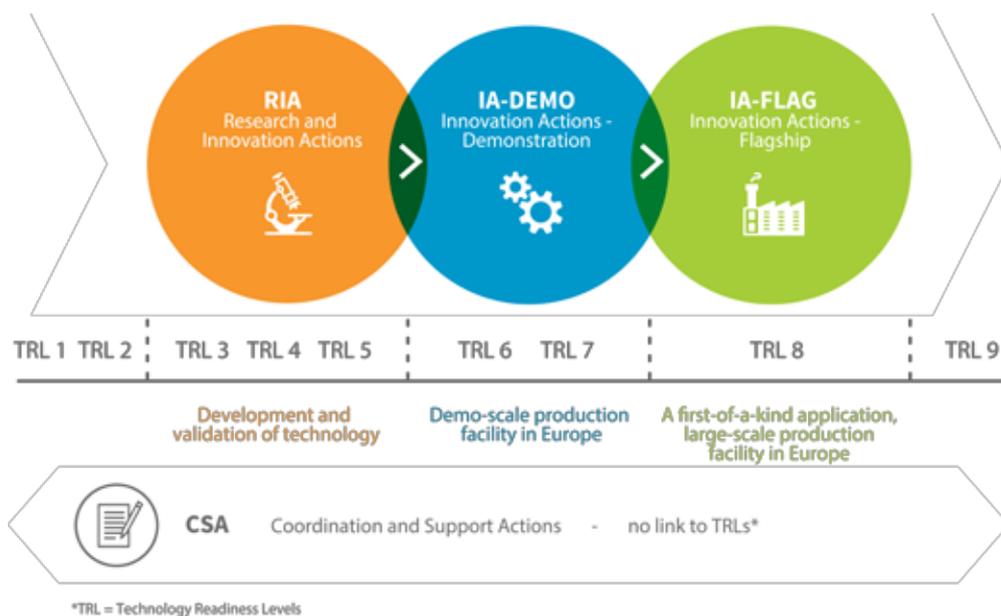
### 2.3.1 Research and Innovation Actions

Research and Innovation Actions are projects focused on developing new technologies through basic and applied research, technology development and integration as well as testing and validation in a laboratory or simulated environment. Projects typically last up to 4 years and may contain demonstration or pilot components.

<sup>1</sup> See <https://www.bbi-europe.eu/> for more information on BBI JU

<sup>2</sup> [http://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016-2017/annexes/h2020-wp1617-annex-ga\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016-2017/annexes/h2020-wp1617-annex-ga_en.pdf), Section G Page 29

Figure 2.1: BBI JU Project Classification



### 2.3.2 Innovation Actions – Demonstration

Demonstration Actions focus on demo-scale production facilities. Projects correspond to TRL levels 6 to 7 and usually last 4-5 years. Value chain demonstration projects are the backbone for subsequent flagship projects.

Focusing on the full value chain, Demonstration Actions focus on optimising flows, reducing costs and developing new technologies in an operational environment. Establishment of a demo-scale production facility is mandatory, whether it is a new installation, a modified existing facility, or an existing demonstration facility.

Related costs are eligible for Horizon 2020 (H2020) funding, within the rules for demonstration and pilot activities.

### 2.3.3 Innovation Actions – Flagship

Flagship Actions focus on first-of-a-kind (FOAK), large-scale production facilities in Europe at TRL level 8. These projects usually last 4-5 years and validate technical and economic performance at pre-commercial level, in real-life operating conditions. Constructing and running these plants entails significantly higher costs and risks compared to demonstration plants.

Supporting technologies which have already been validated at demonstration scale – but not yet deployed in the market – these projects focus on procurement, growth and feedstock supply for the final products. A large-scale production facility will be established, whether it is a new installation, a modified existing facility, or by converting existing industrial facilities. An additional level of investment is expected, in line with the pre-commercial scale of the activities proposed.

## 2.4 PROJECT CASE STUDIES

This section provides a selection of Flagship and Demonstration Actions to illustrate the scope of the projects. Information was sourced from the BBI JU project dissemination reports.

**Table 2.1: PULP2VALUE (Processing Underutilised Low value sugar beet Pulp into VALUE added products)<sup>3</sup>**

Project Summary	Objectives
<p>Europe produces around 13 million tonnes of sugar beet pulp (SBP) every year. Currently, most of this pulp finds its way into low-value feed, bio-fertiliser or biofuels.</p> <p>Using multiple extraction techniques, PULP2VALUE wants to expand the range of high-value products made from sugar beet sidestreams by isolating microcellulose fibres (MCF), arabinose and galacturonic acid. This will boost SBP's value 20-50 times.</p>	<ul style="list-style-type: none"> <li>• <b>Demonstrate</b> an integrated and cost-effective cascading biorefinery system to refine SBP, which will convert 65% of its dry mass into high-value products</li> <li>• <b>Develop value chains</b> for each of these products e.g. detergents, personal care, oil and gas, paints and coatings (from MCF), flavours and food products (from arabinose) and cosmetics (from galacturonic acid)</li> <li>• <b>Create local cross-sectoral value chains</b> involving the sugar, chemical and food industries</li> </ul>
Expected Impacts	
<p>Demonstration of nine new value chains for processing sugar beet pulp into bio-based products, with a market potential of 350,000 tonnes and €200 million.</p> <p>Improved sidestream valorisation from sugar beet production – while current valorisation routes are mainly focused on animal feed and biogas, PULP2VALUE will use 65% of SBP's dry mass to create high-value applications.</p> <p>Carbon footprint reduction of products which are traditionally petro-based (such as glass or Kevlar) by using MCF and biochemical building blocks instead.</p>	
Partnerships	
<ul style="list-style-type: none"> <li>• Coöperatie Koninklijke Cosun U.A., the Netherlands (Coordinator)</li> <li>• Stichting Wageningen Research, the Netherlands</li> <li>• Wageningen University, the Netherlands</li> <li>• Orineo BVBA, Belgium</li> </ul>	<ul style="list-style-type: none"> <li>• Nova-Institut für politische und ökologische Innovation GmbH, Germany</li> <li>• Bio Base Europe Pilot Plant, Belgium</li> <li>• Refresco Gerber UK Ltd, United Kingdom</li> </ul>
Facts and Figures	
<b>Project Classification:</b> Innovation Action – Demonstration	<b>Value Chain:</b> VC3 – Agrobased
<b>Start Date:</b> 01/07/2015; End Date: 30/06/2019	<b>EC Contribution:</b> €6,589,180

<sup>3</sup> <https://bbi-europe.eu/projects/pulp2value>

**Table 2.2: FIRST2RUN (Flagship demonstration of an integrated biorefinery for dry crops sustainable exploitation towards biobased materials production)<sup>4</sup>**

Project Summary	Objectives
<p>The FIRST2RUN project aims to demonstrate the sustainability and profitability of an integrated biorefinery where low input, underutilised and non-food-competing oil crops are valorised for the extraction of vegetable oils.</p> <p>Through the integration of chemical and biotech processes, these oils will be further converted into bio-monomers (mainly pelargonic and azelaic acids) and used as building blocks for high-value bio-based products.</p> <p>The project wants crops from arid and marginal lands to become bio-based building blocks. For example, by extracting and converting cardoon seeds into oil, they can be used to create bio-based products such as lubricants and bioplastics.</p> <p>FIRST2RUN will create a cost-effective, closed-loop system which will have no impact on land use for food production. It will also generate new income for local farmers.</p>	<ul style="list-style-type: none"> <li>• <b>Demonstrate</b> technological, economic and sustainability benefits of processing underutilised oil crops at full scale</li> <li>• <b>Process oil crops</b> into biomonomers and esters which will be further transformed into bio-based products, such as biolubricants, cosmetics, bioplastics and additives</li> <li>• <b>Valorise by-products and co-products</b> for energy, feed products and added-value chemicals</li> <li>• <b>Certify and standardise products</b> and processes, facilitating market penetration and boosting social acceptance</li> </ul>
Expected Impacts	
<p>Valorisation of 3500 ha of marginal lands which are currently unexploited, resulting in at least 0.375 ton/ha of vegetable oil, which will be processed into bio-based products. 16.2 MWth of installed thermal power will be generated using the lignocellulosic fraction.</p> <p>Revitalisation of the local economy by converting old industrial sites and creating skilled jobs. Considering the whole value chain, an estimated 60 new skilled jobs are created for every kiloton of bioplastics produced.</p>	
Partnerships	
<ul style="list-style-type: none"> <li>• Novamont S.p.A., Italy (coordinator)</li> <li>• Matrìca S.p.A., Italy</li> <li>• SoliQz B.V., the Netherlands</li> <li>• SIP Ltd, United Kingdom</li> </ul>	<ul style="list-style-type: none"> <li>• Elementi SRL, Italy</li> <li>• Università di Bologna, Italy</li> <li>• Chemtec UK Limited, United Kingdom</li> </ul>
Facts and Figures	
<b>Project Classification:</b> Innovation Action – Flagship	<b>Value Chain:</b> VC3 – Agrobased
<b>Start Date:</b> 01/07/2015; <b>End Date:</b> 30/06/2019	<b>EC Contribution:</b> €16,995,882

<sup>4</sup> <https://bbi-europe.eu/projects/first2run>



### 3 INVESTMENT PLAN FOR EUROPE: THE JUNCKER PLAN

Since the global economic and financial crisis began in 2008, the EU has been suffering from lower levels of financial investment. The **European Commission** (EC) wants to reverse this downward trend so Europe can recover economically.

To tackle this issue, the EC launched the **Investment Plan for Europe** (also known as the **Juncker Plan**) in 2015, which aims to mobilise €315 billion of investment between 2015-2018. The Juncker Plan is a collective, coordinated effort at European and Member State level to encourage investment through three strategic targets:

- Boosting job creation and economic growth
- Meeting the long-term needs of the economy and increase competitiveness
- Helping strengthen Europe's productive capacity and infrastructure

In this view, the Investment Plan for Europe has operated through three main initiatives:

- **The European Fund for Strategic Investments (EFSI)** - to overcome current market failures by addressing market gaps and mobilizing private investment. It supports strategic investments in key areas such as infrastructure, education, research and innovation, as well as risk finance for small businesses;
- **The European Investment Advisory Hub (EIAH)** - to strengthen support for project development and preparation across the Union. The EIAH supports projects which may be eligible for financing by the EIB (either under EFSI or otherwise), and it is not limited to EIB-financed projects;

- **The European Investment Project Portal (EIPP)** – An online market place where worldwide investors and EU project promoters can meet. It offers EU based private and public project promoters a convenient way to boost the visibility of their investment projects by filling in and submitting a project form. EIPP will show-case these projects aiming at attracting investors worldwide.

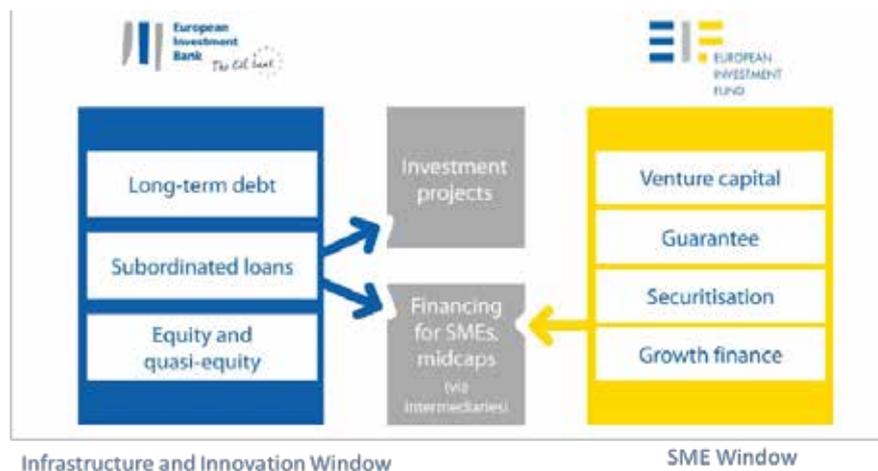
### 3.1 EUROPEAN FUND FOR STRATEGIC INVESTMENTS (EFSI)

As of 14 November 2017, operations approved under the EFSI represent over €43 billion of financing, which triggered €251.6 billion of investments in projects located across all 28 Member States.

In September 2017, the European Parliament and Member States agreed to extend and strengthen the Juncker Plan <sup>1</sup>. The EFSI's initial timeline (2015-2018) is extended to 2020 with an increased investment target of at least €500 billion by 2020. The EIAH will play a bigger role in providing technical assistance to project promoters at a local level, so that more regions and sectors benefit from EFSI support. In line with low-carbon targets from the 'COP 21' Paris Agreement, EFSI will also cover a wider range of sectors such as sustainable agriculture and fisheries.

The following provides a comprehensive overview of each tool available to possible investors and project promoters.

Figure 3.1: EFSI Windows



EFSI provides funding for economically viable projects with a higher risk profile than ordinary EIB activities. It focuses on sectors of key importance where the EIB Group has proven expertise and the capacity to deliver a positive impact on the European economy, summarized in Figure 3.2:

Figure 3.2: EFSI Key Strategic Sectors



<sup>1</sup> At the time of writing this report, a proposal for increasing the EFSI budget was under discussion between the European Commission and the European Parliament

EFSI is demand driven and will provide support for projects everywhere in the EU, including cross-border projects. Projects are considered based on their individual merits. To benefit from financing under EFSI deployed through the EIB Group, projects need to undergo the respective EIB Group due diligence process, in order to verify if they are eligible for EIB Group financing and for a possible backing of EFSI. In particular, projects need to be:

- Economically and technically sound
- In at least one of the EFSI eligible sectors as defined in Article 9 the EFSI Regulation
- Contributing to EU objectives, including sustainable growth and employment
- Mature enough to be bankable

Following a positive outcome of the due diligence process, projects are submitted for approval by the relevant EIB Group Governing Bodies and, for operations under the IIW to the EFSI Investment Committee for the inclusion in the EFSI portfolio partially guaranteed by the EU budget. With respect to SMEW (SME Window), the products are approved by EFSI Investment Committee on a facility level, and then the operations financed thereunder follow the respective EIF governance approval process.

## 3.2 EUROPEAN INVESTMENT ADVISORY HUB (EIAH)

The **European Investment Advisory** (EIAH, or the Hub) is designed to act as a single point of entry to a comprehensive offer of advisory services and technical assistance. It aims to provide targeted support to identify, prepare and develop investment projects across the European Union. The Hub is a partnership between the EIB and the European Commission. Both institutions contribute financially to the initiative. The EIB is responsible for the management of the Hub which is established within the Bank.

The EIAH offers:

1. A single point of entry to a wide range of advisory and technical assistance programmes and initiatives for public and private beneficiaries, provided by high-level experts
2. A cooperation platform to leverage, exchange and disseminate expertise among the EIAH partner institutions and beyond
3. An instrument to assess and address new needs by reinforcing or extending existing advisory services or creating new ones as demand arises

The European Investment Advisory Hub (EIAH) is one of the windows of the Investment Plan for Europe that aims to boost investment, increase competitiveness and support long term economic growth in the EU.

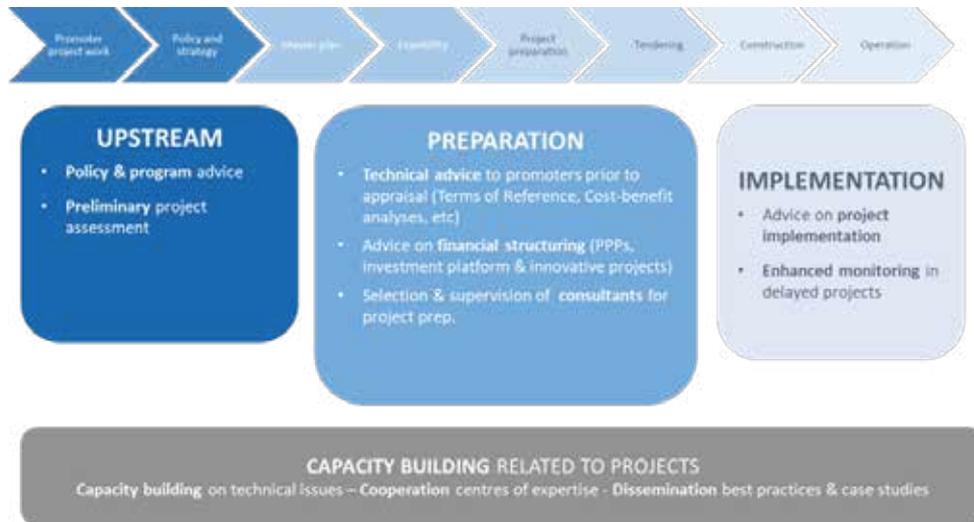
The EIAH aims to strengthen support for project development and preparation across the Union. It builds on the expertise of the European Commission, the EIB Group, National Promotional Institutions and Member States' Managing Authorities. It supports projects which may be eligible for financing by the EIB (either under EFSI or otherwise), although its services are not limited to EIB-financed projects.

The EIAH also coordinates a network of National Promotional Institutions and Managing Authorities. Together, the Hub's partners can deliver a comprehensive and complete advisory services model. Through its network of partner institutions the EIAH provides access to a number of advisory and technical assistance programmes and initiatives. Project promoters, public authorities and private companies can receive technical support to help get their projects off the ground, make them investment-ready, gain advice on suitable funding sources, and access a unique range of technical and financial expertise.

Project promoters can contact the Hub via the form available on [eiah.eib.org/find-support/wizard-page/index.htm](http://eiah.eib.org/find-support/wizard-page/index.htm) or by emailing [eiah@eib.org](mailto:eiah@eib.org).

The advisory programmes accessible via the Hub support public authorities, project promoters and private

**Figure 3.3: EIAH Services Available Throughout the Project Cycle**



companies to improve the quality of investment projects and the overall conditions for access to finance. This may be done in several ways, of which two examples are as follows:

- Support to investment projects (particularly in the innovation space), providing assistance to companies for their fund-raising activities which can enhance access to different funding and financing opportunities
- Assistance to procuring authorities in developing investment programmes to attract private sector participation and funding through a wide range of Public Private Partnerships, developed in line with national priorities

### 3.3 EUROPEAN INVESTMENT PROJECT PORTAL (EIPP)

The **European Investment Project Portal** (EIPP) was established by the European Commission in order to provide greater transparency about EU investment opportunities. It is part of the Investment Plan for Europe and is designed to support investment in the real economy.

The EIPP to serves as a bridge between EU project promoters and investors. The Portal offers EU based private and public project promoters a convenient way to boost the visibility of their investment projects. EIPP showcases these projects in a structured user-friendly way, thus attracting investors worldwide, who will be able to reinforce their own pipelines with more European projects.

The EIPP project promoter shall be a legal entity established in a Member State and shall not be subject to insolvency proceedings. The project promoter must be an organisation properly entitled to represent the project.

The project (or the programme consisting of smaller projects) shall have a minimum total project cost of EUR 1 million. If the project falls short of the minimum project size, the promoter should consider combining it with similar projects in other regions and together submitting a larger project programme. The project will stay on the EIPP for 3 years. During that time, project promoters are encouraged to give updates on how their projects are progressing.

Cross-border projects can also be published on EIPP, under the condition that the investment takes place in all the indicated EU countries. Cross-border projects with non-EU countries are also permitted as long as the investment benefits and takes place, at least partially, in one of the EU Member States.

## 3.4 HOW TO ACCESS EFSI FINANCING SOLUTIONS

### 3.4.1 Types of Entities

Public or private entities can access a wide range of EFSI financial instruments, depending on their status and needs. In the private sector, large corporates, Special Purpose Vehicles<sup>2</sup> or MidCap companies (up to 3,000 employees) can benefit from project loans or loans which finance R&I. MidCap companies and small and medium-sized enterprises (SMEs) with under 250 employees can apply for growth financing or intermediated lending provided by partner financial institutions, and may benefit from EIF's intermediated equity or guarantee products, thus accessing to a wider range of products.

### 3.4.2 Direct and Indirect Project Loans

Promoters aiming at financing projects with a loan exceeding 25 Million Euro are required to provide the Bank's Operations Directorate with a detailed description of their capital investment together with the prospective financing arrangements, forming the application document <sup>3</sup>. For a given project, the maximum size of the EIB loan is 50%, which brings the minimum project size for a direct EIB loan to be EUR 50m. On an average basis, the actual loan vs costs ratio is statistically lower than 50%.

Initial contacts to discuss a proposed project can be in any form, by telephone, fax, e-mail or letter. The project promoter should provide sufficient information to allow the EIB to assess whether the project adheres to EIB lending objectives and has a well-developed business plan.

Should the project requested financing be under EUR 25 m, the EIB provides intermediated loans (credit lines) to local, regional and national banks, the so called financial intermediaries. These entities have signed operations with the EIB for lending via credit lines, and the ultimate decision whether the project can be financed or not remains with the financial intermediary.

It is important to mention the special case of Midcaps, which would access to direct loans from the EIB also for loans ranging between 7.5 and 25 M EUR. Still the opportunity of accessing to loans below 7.5 M EUR exists via the financial intermediaries. Financial Intermediaries could be retrieved at the "Access to finance" web page<sup>4</sup>.

### 3.4.3 Equity

Mid-Caps and SMEs aiming at accessing to financial instruments for equity and quasi-equity (i.e., mezzanine) instruments guaranteed via the EFSI have to contact local financial intermediaries having signed operations with the EIB or the EIF (for the SME windows). The ultimate decision on investment remains with the financial intermediary.

The list of financial intermediaries is available from the web, updated as long as new operations are signed. Therefore, private entities seeking for growth finance are recommended to start their search from the "Access to finance" web page <sup>5</sup>.

Given its success, the EFSI Steering Board has already scaled up the EFSI SMEW in July 2016, which will benefit SMEs and MidCap companies in all Member States – €500 million of the EU guarantee was transferred from the IIW to the SMEW. Under EFSI, the EU guarantee can be used to 'top-up' InnovFin and COSME loan guarantee instruments, as well as the EU Programme for Employment and Social Innovation (EaSI) and develop new products.

<sup>2</sup> A Special Purpose Vehicle (SPV) is a legal entity created by the sponsor or originator, typically a major investment bank or insurance company, to fulfil a temporary objective of the sponsoring firm. SPVs can be viewed as a method of disaggregating the risks of an underlying pool of exposures held by the SPV and reallocating them to investors willing to take on those risks. This allows investors access to investment opportunities which would not otherwise exist and provides a new source of revenue generation for the sponsoring firm (Source: PWC, 'The next chapter – Creating an understanding of Special Purpose Vehicles', December 2011)

<sup>3</sup> [http://www.eib.org/attachments/application\\_documents\\_en.pdf](http://www.eib.org/attachments/application_documents_en.pdf)

<sup>4</sup> <http://europa.eu/youreurope/business/funding-grants/access-to-finance/>

<sup>5</sup> <http://europa.eu/youreurope/business/funding-grants/access-to-finance/>



## 4 INNOVFIN

### 4.1 WHAT IS INNOVFIN?

Following the need of further exploiting the results of innovation generated by European collaborative research projects, the European Commission and the EIB Group have launched a set of financial instruments and advisory services to help innovative firms access finance more easily. This overall instrument is called «InnovFin – EU Finance for Innovators», and is part of the H2020 programme. This has been built on the basis of the Risk Sharing Finance Facility (RSFF), jointly established by the EIB Group and the EC, which financed 114 research and innovation projects to the tune of EUR 11.3bn and in addition provided loan guarantees worth over EUR 1.4bn over the period between 2007 and 2013. This catalysed a further EUR 37.2bn in private investment in European innovation.

Until 2020, InnovFin will make available financing for investments in research and innovation by companies, small to large, young to well-established, and the promoters of research. The InnovFin product range consists of a suite of tailored financial instruments. Regardless the size and stage of the project, innovators' may expect to find an instrument fulfilling their specific needs. Within the scope of InnovFin beneficiaries may access to finance from EUR 25 000 up to EUR 500m, either directly or indirectly through banks or other financial institutions to finance projects or growth. An overview of the full set of instruments constituting InnovFin is provided in Figure 4.1.

It is important to note that the in depth interim evaluation of Horizon 2020 published by the EC <sup>1</sup> on 16.06.2017 has pointed out a need for reviewing partly the InnovFin strategy in order to make it fit and more suitable to

<sup>1</sup> [https://ec.europa.eu/info/publications/interim-evaluation-horizon-2020\\_en](https://ec.europa.eu/info/publications/interim-evaluation-horizon-2020_en)

the joint existence with the EFSI, primarily for some of its direct products. Accordingly to that document, whilst the risk is that EFSI operations are privileged over H2020/CEF operations, the EIB is underway to refocus some of the InnovFin products in order to manage optimally the overlap with EFSI in terms of both risk spectrum and eligibility, and achieve satisfactorily the InnovFin objectives.

## 4.2 INNOVFIN OVERVIEW

InnovFin supports ‘Proof of Concept’ projects, pre-seed, seed, SMEs with equity investments and co-investments in or alongside funds focusing on the areas of early-stage financing via its dedicated InnovFin Equity products (see Figure 4.1): InnovFin Technology Transfer, InnovFin Business Angels, InnovFin Venture Capital and InnovFin Fund-of-Funds. It also offers debt financing of EUR 25.000 to EUR 7.5m to SMEs and small midcaps (up to 499 employees) via local financial intermediaries through InnovFin SME Guarantee. InnovFin Emerging Innovators provides financing to bridge the research and innovation (R&I) investment gap in EU Member States which are labeled as Moderate Innovators and Modest Innovators in the European Innovation Scoreboard<sup>2</sup> and Horizon 2020 Associated Countries. The funding is being made available by the European Investment Bank or through a financial intermediary via loans and equity-type financing starting at EUR 7.5 million.

Figure 4.1: Overview of InnovFin Products



The InnovFin MidCap Guarantee provides guarantees and counter-guarantees deployed through financial intermediaries (namely banks and other financial institutions) on debt financing of up to EUR 50 million, in order to improve access to finance for innovative mid-caps (up to 3 000 employees) that are not considered eligible under the InnovFin SME Guarantee. InnovFin Corporate Research Equity increases the supply of equity-type financing under EFSI to large R&I programmes as well as innovative large MidCaps and SMEs. It addresses the market gap for large equity-type investment in the form of contingent loans, in particular with mid- to long-term repayments profile that are directly linked to product development cycles. The investments are deployed by the European Investment Bank (EIB) or through a financial intermediary and target amounts of EUR 75 million.

InnovFin Science aims at supporting research and innovation (R&I) investments by public or private research institutes/organisations and universities, including the financing of buildings and other infrastructure directly

2 [http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards\\_en](http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en)

related to R&I activity. InnovFin Science is being made available directly by the EIB in the form of debt or equity-type financing from EUR 25 million.

**Table 4.1: Breakdown of InnovFin Financial Products**

Product	SME and Small MidCap	Large MidCap	Large Caps	Research Institutes
<b>InnovFin SME Guarantee</b>	Intermediated €25,000-€7.5 million (debt)	-	-	-
<b>InnovFin Equity</b>	Intermediated Equity	-	-	-
<b>InnovFin Emerging Innovators<sup>3</sup></b>	Direct or intermediated debt and equity above €7.5 million	Direct or intermediated debt and equity above €7.5 million	Direct or intermediated debt and equity above €7.5 million	-
<b>InnovFin Midcap Guarantee</b>	-	Intermediated debt below €50 million	-	-
<b>InnovFin Corporate Research Equity<sup>4</sup></b>	Direct or intermediated equity target amounts of €75 million	Direct or intermediated equity target amounts of €75m	-	-
<b>InnovFin Science</b>	-	-	-	Direct or intermediated debt and equity above €25 million

InnovFin further includes thematic products addressing the specific financing needs of certain innovative sectors which traditionally find it difficult to access finance. InnovFin Energy Demo Projects targets innovative first-of-a-kind commercial-scale demonstration projects to help them to bridge the gap from demonstration to commercialisation. The InnovFin Infectious Diseases Finance Facility provides financial products for R&I-oriented companies to develop new innovative vaccines, drugs, medical and diagnostic devices or novel research infrastructures.

InnovFin Thematic Investment Platforms will catalyse third-party financing for thematic areas, such as the circular bioeconomy. The platforms will provide access to finance via debt or equity-type products to innovative projects in specific thematic areas and will be managed by financial intermediaries and fund managers selected through open call for expression of interest.

Companies can also benefit from InnovFin Advisory, services aiming to improve the bankability and investment readiness of large projects which need substantial, long-term investment.

### 4.3 CIRCULAR BIOECONOMY THEMATIC INVESTMENT PLATFORM (TIP)

Following the results of the Study on Access-to-Finance Conditions for Investments in Bio-Based Industries and the Blue Economy, published in June 2017, a thematic investment platform focused on the Circular Bioeconomy has been created within the scope of the InnovFin Thematic Investment Platforms. This Investment Platform will

<sup>3</sup> Geographical criteria apply. Product is dedicated to entities established in countries labelled Moderate or Modest innovators in the European Innovation Scoreboard, or in H2020 Associated Countries

<sup>4</sup> Increases the supply of equity-type financing under EFSI. Applies to EFSI's geographical scope (EU country, cross-border projects towards enlargement countries, Eastern and Southern neighbourhood, EEA/EFTA, Overseas countries and territories)

receive financial support from the EU budget and its purpose will be to mobilise additional public and private investors to invest in the Bioeconomy. It will also contribute to the EU agenda for a circular economy.

The **Circular Bioeconomy Thematic Investment Platform** (TIP) aims at providing access to finance, in particular in the form of debt or quasi-equity, to innovative bioeconomy projects and focusses in priority, but not exclusively, on innovative circular bioeconomy projects.

The Platform may serve, amongst others, projects that use terrestrial or aquatic biomass (including waste, residues, discards and by-products from the agricultural, agro-food, forestry and aquatic sectors) for innovative bio-based products or processes, or to valorise it for other innovative purposes (amongst which food, feed, fertilisers or soil improvers). Projects focusing exclusively or mainly on renewable energy generation (fuels, heat or power) are not in the scope of the action.

The platform is work in progress and more information will be available in Q1 2018.

## 4.4 HOW TO ACCESS INNOVFIN FINANCIAL PRODUCTS

### 4.4.1 Large Companies

Large companies (employing more than 3000 people at group level) may access the InnovFin Emerging Innovators product. Entities interested in accessing are to be established in countries labelled in the European Innovation Scoreboard as moderate or modest innovators, or in H2020 Associated Countries. InnovFin Emerging innovators. Funding is made available by the EIB or through a financial intermediary via loans and equity type financing starting at EUR 7.5 m. The product supports R&I activities or infrastructures falling under the scope of the Eureka Network <sup>5</sup>, the European Research Area (ERA)<sup>6</sup> under the H2020 programme.

### 4.4.2 Large MidCap Enterprises

Mid Cap Companies can benefit from the funding facility if they size between 250 and 3000 employees at group level<sup>7</sup>. They can get can get access to three types of financial instruments:

- InnovFin Emerging Innovators provides financing to mid-caps which are fast-growing and/or innovation-driven in support of R&I activities or infrastructures falling under the scope of the Eureka Network or the European Research Area (ERA) under the Horizon 2020 programme;
- “InnovFin MidCap Guarantee” provides a 50% guarantee on a portfolio (max EUR 500m) of new loans granted by financial intermediaries (FIs) to innovative companies. The Midcap companies should be based in EU-28 and Associated Countries and should have minimum midcap rating limit. Loans range from EUR 7.5m (or EUR 1m if not eligible under the SME Guarantee) to EUR 50m. Companies in this case need the support of the financial intermediaries i.e. banks and other lending institutions, guarantee schemes or debt funds which are selected by the EIB;
- MidCaps investing in innovative sectors covered by H2020 (i.e. including life sciences, clean energy, high-tech, social innovation) are also eligible to apply for InnovFin Corporate Research equity if they comply to the following eligibility criteria for growth finance under EFSI:
  - Have less than 3 000 full-time employees at the time of application
  - One or more rounds of financing with financial or strategic investors already raised
  - Can demonstrate sound corporate governance, viable business plans, and sustainable capital structures

<sup>5</sup> See [www.eurekanetwork.org](http://www.eurekanetwork.org)

<sup>6</sup> See [ec.europa.eu/research/era/index\\_en.htm](http://ec.europa.eu/research/era/index_en.htm)

<sup>7</sup> Companies cannot perform R&I activities related to human cloning, genetic heritage of human beings, human embryos, human stem cells, nuclear energy or military applications

### **4.4.3 Small MidCaps and SMEs**

Research-based and innovation driven SMEs and Small Mid-caps having less than 500 employees, established and/or operating in one or several EU Member States and Horizon 2020 Associated Countries, and compliant with the relevant applicable innovation, company and transaction eligibility criteria, may be eligible for debt and equity financing covered under InnovFin SME Guarantee (in the form of loans, leases and guarantees between EUR 25.000 and EUR 7.5 million) and InnovFin Equity (in the form of risk capital).

Small Mid Cap and SME's must select and contact a financial intermediary to access the facility. In order to find the most suitable financial intermediary, candidate beneficiaries may check it through the web page of the EIF, downloading the SME Guarantee financial intermediaries or sub intermediaries.

### **4.4.4 Research Institutes**

R&I activities, investments and infrastructures which fall under the H2020 programme are eligible to receive InnovFin Science funding. For eligibility, projects must be located in one or more EU Member States and/or in one or more of the Horizon 2020 Associated Countries

### **4.4.5 Projects**

Technology transfer projects or technology rights can be supported by InnovFin Technology Transfer part of the InnovFin Equity, through commercial demonstration and commercialisation, by targeting investments into technology transfer funds operating in the pre-seed (including Proof of Concept) and seed stages. Its objective is to accelerate technological innovations, especially in the areas of key enabling technologies (including ICT, nanotechnology, biotech, cleantech, and medtech) and other H2020 objectives, such as IP promotion/exploitation (licensing, sale of patents), spin-outs, spin-offs and joint venture activities.



## 5 EUROPEAN STRUCTURAL AND INVESTMENT FUNDS (ESIF)

The EU is committed to creating jobs and building a socially inclusive society, which is at the core of the Europe 2020 strategy. **European Structural and Investment Funds** (ESIF) support this aim and focus on other fund-specific missions such as economic, social and territorial cohesion.

These funds are defined in the Treaties, although policy reforms between 2014-2020 are based on the Europe 2020 strategy. For cohesion policy, this reform has led to two main goals:

- Investment to boost growth and jobs, a common goal for all three types of regions: less-developed, transition and more-developed
- European territorial cooperation, supported by the European Regional Development Fund (ERDF)

ESIF includes five different funds, all covered by the Common Provisions Regulation – Regulation (EU) No 1303/2013 of the European Parliament and of the Council:

- The **European Regional Development Fund** (ERDF) provides financial support for developing and restructuring regional economies and aims to facilitate economic change, enhance competitiveness and boost territorial cooperation throughout the EU
- The **European Social Fund** (ESF) supports workers and companies by boosting access to employment and participation in the labour market, focusing on social inclusion of disadvantaged people, combatting discrimination and creating partnerships to manage employment reform

- The **Cohesion Fund** (CF), aims to reduce economic and social disparities and promote sustainable development
- The **European Agricultural Fund for Rural Development** (EAFRD) aims to strengthen the EU's agriculture, forestry sector and boost rural areas
- The **European Maritime and Fisheries Fund** (EMFF), supports the implementation of the reformed Common Fisheries Policy (CFP) and the EU Integrated Maritime Policy

## 5.1 THE ESIF AS A FINANCIAL INSTRUMENT

Aiming to boost EU citizens' quality of life, ESIF can be used as a comprehensive support tool. It invests in a range of sectors e.g. businesses, research and development, infrastructure, employment and training, agriculture, forestry and fisheries development. Funds worth €450 billion are available for Member States and their regions until 2020.

As the funds' managing authorities, Member States and regions can use financial instruments as an efficient, sustainable way to provide support for a programme co-funded by ESIF. The managing authority may decide to use funds either as grants or as financial guarantees to support development.

Financial instruments are suitable for financially-viable projects expected to generate enough income to pay back the support received. This includes loans, equity and guarantees. Projects must address an identified market failure, i.e. where banks refuse to lend or the private sector is unwilling to invest.

Amounts invested via financial instruments through ERDF and ESF programmes have grown significantly in recent years. As previously mentioned, they are expected to increase further under ESIF in 2014-2020 and through the Investment Plan for Europe.

## 5.2 SMART SPECIALISATION STRATEGIES

All EU regions have published national or regional **Smart Specialisation Strategy** (RIS3) documents. The RIS3 is one of the ex-ante conditionalities of funding period 2014-2020 for the approval of a Regional/National Operational Programme, which is co-funded by the ERDF. RIS3 must fulfil the following criteria, as explained in the 'Bioeconomy development in EU Regions' report<sup>1</sup>:

- Be based on a SWOT or similar analysis which focuses on a limited set of research & innovation (R&I) priorities
- Outline measures to stimulate private R&I investment
- Incorporate a monitoring mechanism
- Create a framework outlining available budgetary resources for research & innovation which has been adopted (CPR (EU) 1301/2013, Annex XI)

Similarities exist between different regional and national RIS3 documents e.g. on bioeconomy deployment. This might lead to collaborations for research & development (R&D), knowledge transfer or policy innovation between Member States and regions with similar research profiles.

The EU bio-based sector shows a lot of potential. In the following sections, regions with bioeconomy research and innovation (R&I) priorities in agriculture, waste processing and biorefineries during funding period 2014-2020 are discussed.

<sup>1</sup> [https://ec.europa.eu/research/bioeconomy/pdf/publications/bioeconomy\\_development\\_in\\_eu\\_regions.pdf](https://ec.europa.eu/research/bioeconomy/pdf/publications/bioeconomy_development_in_eu_regions.pdf)

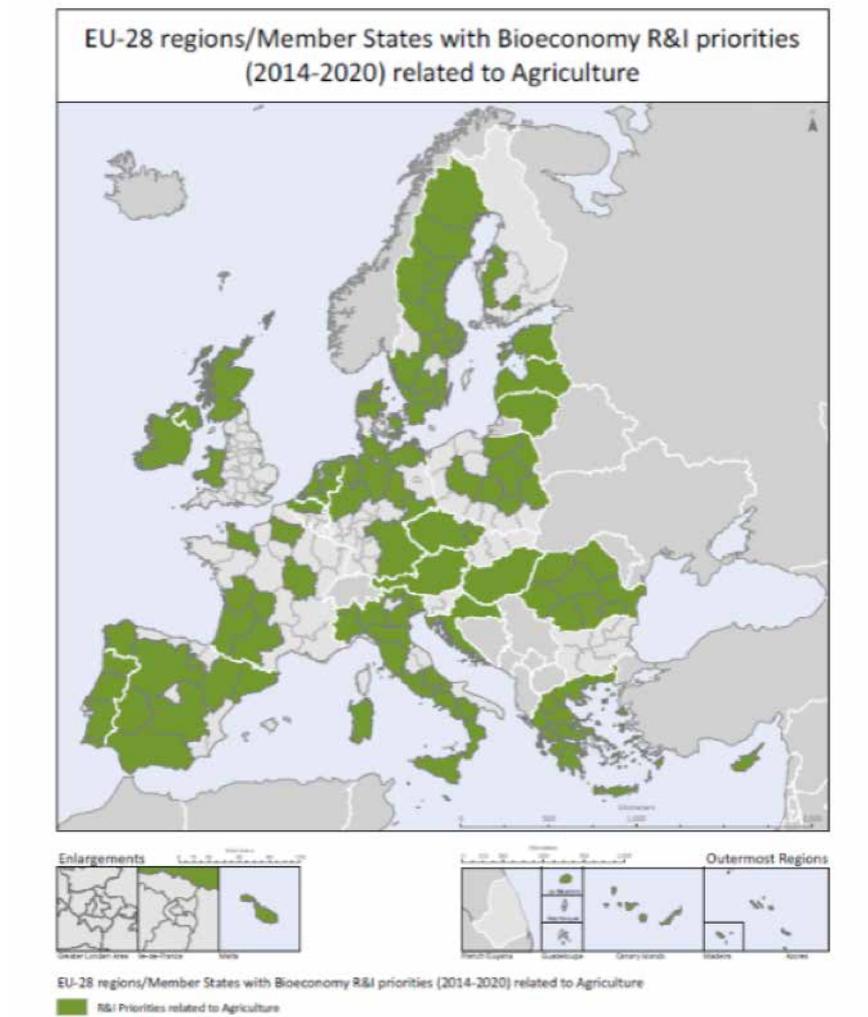
## 5.2.1 EU Regions with Bioeconomy R&I Priorities (2014-2020) Related to Agriculture

Figure 5.1 shows EU Member States and regions with agricultural R&I priorities, according to the RIS3 Strategies.

The EU's strategic approach to agricultural research focuses on land-based primary production from agriculture and forestry, food and non-food chains and the rural economy. Five priority areas have been grouped to focus on:

- a. Creating value from land
- b. Enhancing rural innovation

**Figure 5.1: EU Regions with Bioeconomy R&I Priorities (Agriculture)**

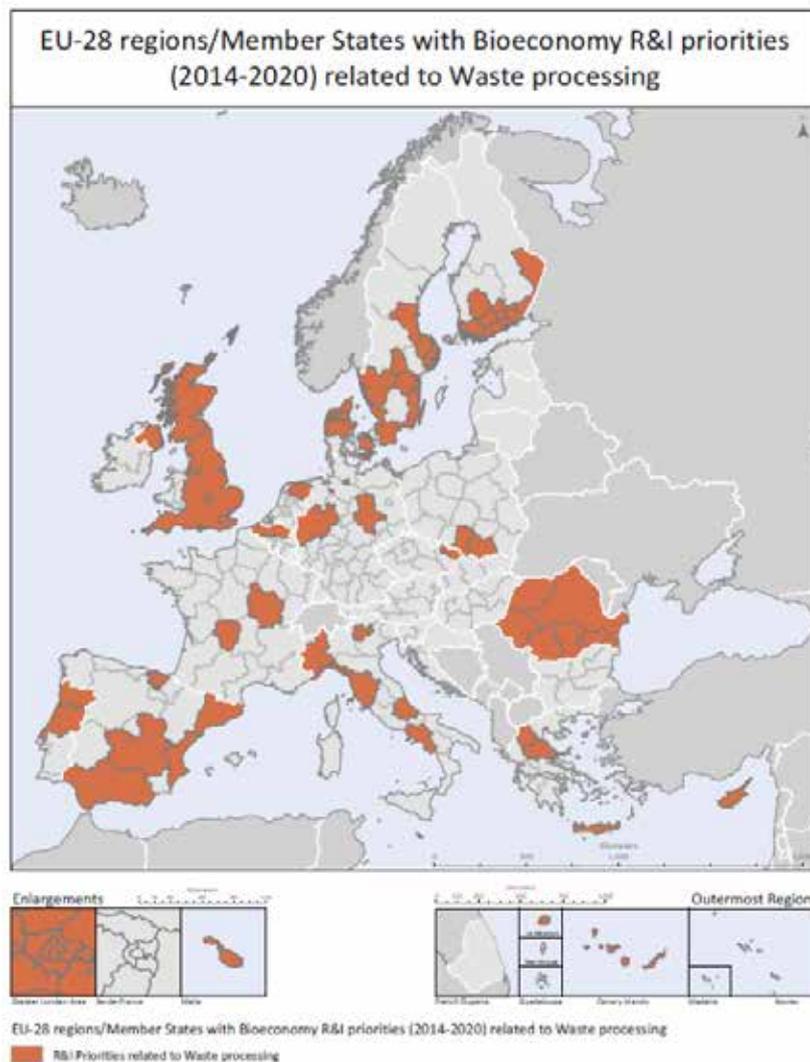


## 5.2.2 EU Regions with Bioeconomy R&I Priorities (2014-2020) Related to Waste Processing

Figure 5.2 shows EU Member States and regions with waste processing R&I priorities. In this context, value is added to biomass such as crop residues, paper/wood/food waste and agricultural by-products which are currently only considered as waste (ICCT 2013, Kretschmer et al. 2013).

Maximising consecutive re-use cycles and diversifying re-use across the value chain is a way to improve resource efficiency (Ellen MacArthur Foundation 2013) and establish a circular economy (European Commission 2015a).

**Figure 5.2: EU Regions with Bioeconomy R&I Priorities (Waste Processing)**



January, 2017  
 Data: NUTS 2011  
 Source: 'Mapping of EU Member States/regions' Research and innovation plans & Strategies for Smart Specialisation (RIS3) on Bioeconomy for 2014-2020' elaborated by Spatial Foresight, SWICO, G4, German Group, Nordregio, Infode for DG RTD, European Commission.

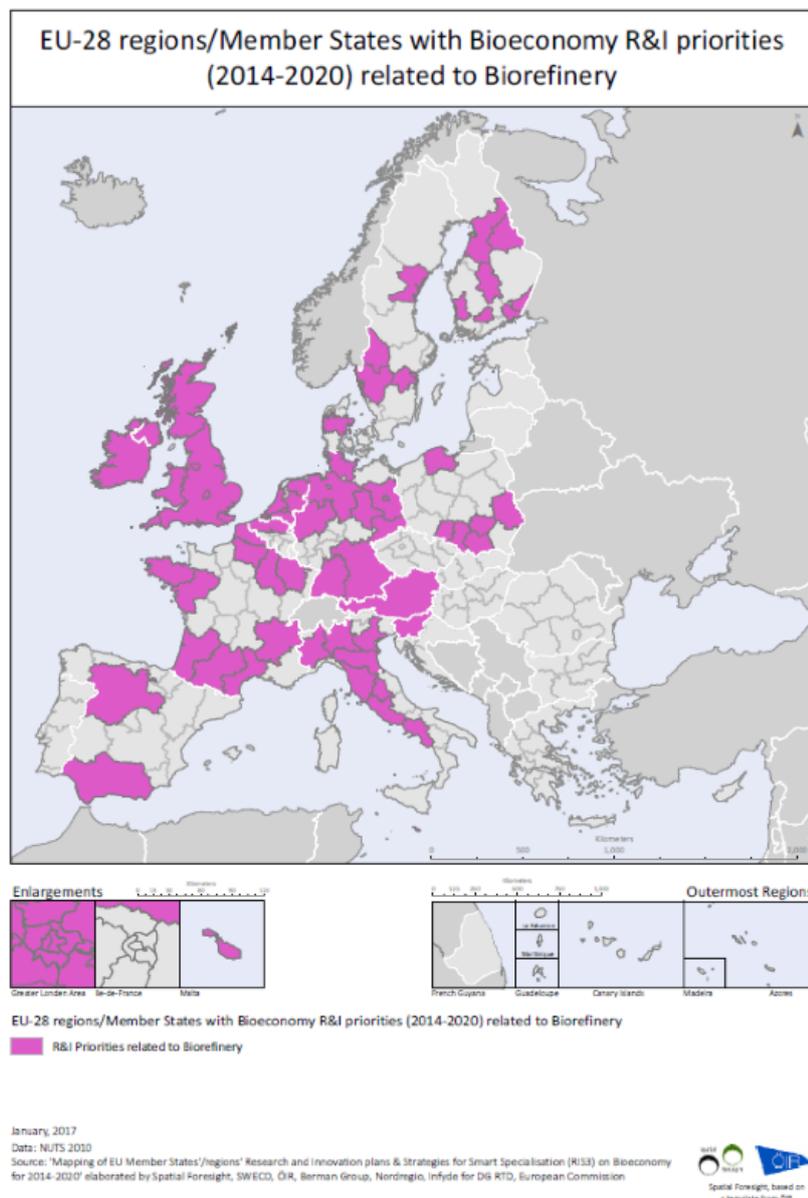


### 5.2.3 EU Regions with Bioeconomy R&I priorities (2014-2020) Related to Biorefineries

Figure 5.3 shows EU Member States and regions with biorefinery R&I priorities.

Biorefining includes the application of bioprocesses for the integrated production of materials, chemicals, fuels and energy from biomass (Scottish Enterprise 2015). The integration of biorefining into industrial value chains is driven by either upstream players (producers and transformers of biomass) or downstream customers (producers of intermediates and final products) (Golembiewski et al. 2015).

**Figure 5.3: EU Regions with Bioeconomy R&I priorities (Biorefinery)**



## 5.3 REGIONAL COLLABORATION

### 5.3.1 The Smart Specialisation Platform S3

The EC operates the **Smart Specialisation Platform** (S3<sup>2</sup>), which provides advice to EU countries and regions for the design and implementation of their **Research and Innovations Strategies for Smart Specialisation** (RIS3), by:

- Providing guidance material and good practice examples
- Informing strategy formation and policymaking
- Facilitating peer reviews and mutual learning
- Supporting access to relevant data
- Training policymakers

Different platforms have been created within S3 between regions with similar priorities. Three thematic platforms have been formed so far: Agri-Food, Energy and Industrial Modernisation. Agri-Food has a strong connection to the bioeconomy, while Energy and Industrial Modernisation include sub-areas related to bioenergy, new production cycles and biorefinery processes.

S3's main objective is to stimulate knowledge transfer, bringing together researchers and innovators in specialised areas and giving resources for strategic investments in close-to-market initiatives (demo projects, living laboratories, pilot plants etc.).

Part of S3, the Stairway to Excellence (S2E) project provides assistance to the 13 Member States (EU13) who have joined the European Union since 2004. Aiming to close the innovation gap, the S2E country reports help understand the national and regional innovation maturity, including bioeconomy-related R&I.

### 5.3.2 Other Collaboration Initiatives

Several networks focus on building European cooperation between regions with similar priorities:

- **European Regions Research and Innovation Network** (ERRIN) is a network of over 90 European regions which aims to strengthen regions' R&I capacities. ERRIN facilitates knowledge exchange, joint actions and project partnerships
- **European Regions for Innovation in Agriculture, Food and Forestry** (ERIAFF) represents regions prioritising the agriculture, forestry and food industries
- The **Vanguard Initiative** promotes interregional innovation cooperation to speed up market uptake of new technologies, exploring public-private investment and co-funding possibilities. The Vanguard Initiative involves key stakeholders from regional governments, industry, universities/research and technology providers. The network is seeking integrated pilot plant solutions required by industry to validate high-risk investments in

<sup>2</sup> provides advice to EU countries and regions for the design and implementation of their Research and Innovation Strategies for Smart Specialisation (RIS3) - <http://s3platform.jrc.ec.europa.eu/home>

the circular economy before full-scale industrial implementation. Table 5.1 shows an overview of Vanguard Initiative bioeconomy demo cases, where projects have been supported by a lending region.

**Table 5.1: Vanguard Initiative Bioeconomy Demo Cases**

Demo Cases	Objective	Lending Region
Bio-based Aromatics	Create interregional value chains and jointly demonstrate biomass valorisation for aromatics	Flanders – VITO (Belgium)
Lignocellulose Refinery	Produce bulk and fine chemicals and fuels from lignocellulosic biomass. Set up European value chain from lignocellulose to end products through a biorefinery	Randstad – Biobased Delta (The Netherlands)
Biogas Beyond Energy	Advance state-of-the-art biogas production and create more, value-added products	Lombardy – Green Chemistry Association (Italy)
Turning (Waste) Gas Into Value	Turn C1 gas streams (from biogas production, biomass gasification or industrial emissions) into chemicals or fuels	Flanders – Ghent Bioenergy Valley (Belgium)
Bio-Aviation Fuel	Promoting larger-scale aviation biofuel production	Värmland – Paper Province (Sweden)
Food and Feed from Agrofood Waste	Extracting functional food and feed from different waste streams such as fish, domesticated animals, cereals, fruit and vegetables	Scotland – Scottish Enterprise (UK)
Food and Feed Ingredients from Algae	Extracting high-value products from microalgae for the food and feed sector	Asturias – University of Oviedo (Spain)



## 6 THE EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT (EBRD)

The **European Bank for Reconstruction and Development** (EBRD) is an international financial institution with a mandate to promote the transition to well-functioning market economies. The Bank finances projects and promotes policy dialogue in 37 countries from Central-Eastern Europe, Central Asia and the wider Mediterranean region. The EBRD operates in 12 EU Member States, EU candidate countries as well as countries in the EU Neighbours East and South regions<sup>1</sup>.

### 6.1 THE “GREEN ECONOMY TRANSITION” APPROACH

One of the EBRD’s main goals is to foster environmental sustainability, which is why the Bank has adopted strategies placing sustainable energy and efficient resource use at the heart of its operations, over the past decade.

In 2015, the Bank launched its **Green Economy Transition approach** (GET)<sup>2</sup> to bolster innovative technologies by addressing market opportunities and failures related to resource use and environmental degradation. Building on a tried and tested business model of combining investments with technical assistance and policy dialogue, at least 40% of the Bank annual business volume will be GET-related by 2020.

<sup>1</sup> EU Member States: Bulgaria, Croatia, Cyprus, Estonia, Greece, Latvia, Lithuania, Hungary, Poland, Romania, the Slovak Republic, Slovenia. EU candidate and potential candidate countries: Albania, Bosnia and Herzegovina, Kosovo, the Former Yugoslav Republic of Macedonia, Montenegro, Serbia and Turkey. EU Neighbours East and South countries: Armenia, Azerbaijan, Belarus, Egypt, Georgia, Jordan, Lebanon, Moldova, Morocco, Tunisia and Ukraine. Others: Kazakhstan, the Kyrgyz Republic, Mongolia, Russia, Tajikistan, Turkmenistan and Uzbekistan.

<sup>2</sup> <http://www.ebrd.com/what-we-do/get.html>

Supporting the bioeconomy is an important part of the GET strategy as the EBRD is interested in engaging with companies across the bio-based value chain. The Bank offers many services to the bioeconomy sector, which are discussed in detail in this chapter.

The EBRD can offer the bioeconomy sector:

- **A broad range of financial products** such as of loans, equity, guarantees or hybrid structures which are tailored to each client
- **Technical expertise and resources for structuring and implementation support** such as technical feasibility and market studies, project design improvement, project management and implementation support, as well as potential concessional co-financing or grants drawn from donor support
- **Rapid project scoping, approval and delivery**, moulded around a business-oriented banking structure

## 6.2 FINANCING PRODUCTS

The EBRD offers the following financing solutions:

- **Debt** at various levels of seniority as loans, with syndication of additional lending from partner banks where appropriate. Debt can also be offered as bond purchases. The EBRD directly provides loans of €5 million and above, although it also considers innovative projects with smaller financing. The EBRD's share, or the EBRD-syndicated share of a total project's value can be up to around 60% of financing needs. Average loan tenors range from of 5-7 years, or 10-15 years for large-scale infrastructure
- **Equity** and quasi-equity instruments are similarly available for larger-scale projects. The EBRD can take on minority stakes, with an exit term of within 3-7 years from initial investment
- **Smaller-scale lending or leasing via local partner financial institutions** is available for financing needs of typically up to €1 million through the EBRD's Green Economy Financing Facilities (GEFF). GEFFs are country or region-specific programmes where EBRD lends to local partner financial institutions who on-lend to smaller sustainable energy and resource efficiency projects, with assistance from teams of technical experts<sup>3</sup>
- **Guarantees** can be arranged in the form of trade facilitation for import/export operations, as pure guarantees or advanced trade finance, to enable the smooth purchase and transfer of innovative technologies. Amounts guaranteed are between €500,000 to €50 million, with cover terms of up to 3 years.

Subject to credit adequacy and sufficient security arrangements, support is offered as corporate financing, for project finance, or to municipal, public-private partnerships (PPPs) and other mixed public-private structures. Major foreign currencies and local currencies are considered.

Support and pricing will reflect the specific circumstances of each client and are generally be aligned with the commercial conditions of the local markets. However, EBRD will support projects or companies which promote novel technologies, thus intrinsically assuming a higher level of perceived risk in return for demonstration impact.

## 6.3 COMPLEMENTARY TECHNICAL-FINANCIAL SUPPORT AND POLICY DIALOGUE

The EBRD relies on in-house technical experts and a wide network of international and local consultants to deliver support. The Bank offers tailored client-specific support to prepare and implement bioeconomy projects:

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3 [www.ebrdgeff.com](http://www.ebrdgeff.com)

- **Project scoping:** technical feasibility studies, market analyses, project or investment plan assessments for recommending potential improvements in project design or technology solutions, based on technical indicators and financial returns
- **Project implementation:** project management, implementation support including for procurement and monitoring and verification of technical performance, company-level training and capacity building
- **Other sustainability-focused technical assistance:** e.g. support for pure R&D activities and services, developing and monetising carbon emission credits (based on the emission reductions resulting from implemented projects with EBRD assisting in planning, monetising and transacting such assets), assistance in applying for additional support under co-financing schemes managed by other organisations

**Concessional or grant co-financing** can be mobilised to complement EBRD financing offered on commercial terms. This helps overcome identified market barriers or risks, including those associated with low market penetration rates, underdeveloped local supply chains, early-stage commercialisation and environmental co-benefits not be reflected in the financial returns. In the selected markets where such support is available, its deployment is either:

- **Technology transfer-focused:** enabling adoption of advanced technologies which are not readily available nationally
- **Innovation-focused:** overcoming wider risks associated with early-stage development and deployment of new technologies

Concessional financing can be structured to support projects in various ways, e.g. as concessional loan facilities blended with EBRD's main financing, or as grants received by the beneficiary after successful project implementation. Concessional and grant co-financing resources are obtained from multilateral, governmental and institutional donors, therefore are subject to availability and reflect donor objectives.

As part of its **policy dialogue activities**, EBRD also works closely with local and national authorities, supporting investment plans, legislation, regulations and other policy interventions to develop strong institutional and regulatory frameworks, a prerequisite for sustainable investments.

## 6.4 EFFECTIVE PROJECT CYCLE

Obtaining EBRD support is a straightforward, business-oriented process. Progress to financial close and implementation depends on the level of development of each investment plan, with activities broadly grouped into:

- **Origination:** sponsor companies contact EBRD for potential financing. The Bank is also actively looking to help existing and potential clients develop projects
- **Banking due diligence:** like most financial institutions, the EBRD has streamlined procedures to assess the creditworthiness of clients, ascertain project technical viability, consider market demand, and check potential integrity aspects and the environmental and social impacts of projects.
- **Technical assistance:** focused specifically on bio-economy investments or investment components can be delivered in parallel with the banking analysis, to seamlessly enable the financial support to be calibrated and agreed.

## 6.5 EXAMPLES OF EBRD-SUPPORTED BIOECONOMY PROJECTS

In the area of the bio-economy, the EBRD has supported investments targeting: residues valorisation in agribusinesses, energy efficiency in the processing phase and production of biofuels, bio-fertiliser and other bio-based products. Some examples of EBRD projects are listed below.

Country	Company	Project	Financing
Romania	Oilseed operator	<p>Boosting resource efficiency:</p> <ul style="list-style-type: none"> <li>• Improvement of high-oleic crop farming practices</li> <li>• Production capacity expansion and process upgrades</li> <li>• Biofuels production facility</li> <li>• On-site energy production from husk and residues</li> <li>• Various energy and water saving measures</li> <li>• Engagement with farmers/suppliers on traceability standards</li> </ul>	€297 million loan (total project value of €347 million)
Poland	Energy supplier for the largest paper and containerboard producers in Europe	Converting existing boiler into a forest biomass-fired boiler (80MWt capacity) and financing major repairs and modernising existing facilities to supply energy to its off-taker	€30 million (total project value of €106 million)
Serbia	Large agri-business group	Resource efficiency investment at two plants specialised in seed crushing and soya bean protein production, which included the replacement of natural gas-fired boilers with biomass boilers using waste soya molasses as well as soya bean straw, electric motor replacements and steam distribution system upgrades	Loans of €15 million, divided into two tranches
Estonia and Latvia	Wood pellet producer specialised in forestry management and biomass-based electricity and heat generation	Construction of six biomass-based combined heat and power (CHP) plants with generation capacity of 41MW electricity and 109 MW heat. The heat and some of the electricity output supports the company's pellet business.	€100 million (total project value of €124 million)
Croatia	Energy generation subsidiary of a large agri-business group	Construction of a biogas plant fuelled with biomass silage, manure and other organic waste, of 1MW electricity and 1MW heat	€5 million (total project value of €7.2 million)
Ukraine	Special purpose company established by leading agribusiness group	Project finance-based lending for the construction of a 2.2MW electricity biogas plant. The plant will process pressed sugar beet pulp and animal manure. Parallel long-term concessional loan from the Clean Technology Fund	€5 million EBRD loan and Clean Technology Fund concessional co-financing of €2 million (total project value of €12 million)

In many countries where the EBRD operates, several market potential and project-specific feasibility studies have been developed in recent years, with a view to understanding current barriers, market structure, policy needs and investment potential. These studies look at bio-based industry value chains such as biofuels, bio-fertilisers and other bio-based agricultural inputs.



## 7 **NER 300 FUNDS (INNOVATION FUND)**

**NER 300** was funded from the sale of 300 million emission allowances from the **New Entrants' Reserve (NER)**, set up for the third phase (2013–2020) of the **EU Emissions Trading System (EU ETS)**. One of the world's largest funding programmes for low-carbon energy demonstration projects, it was created to help demonstrate Carbon Capture and Storage (CCS) and innovative renewable energy technologies at a commercial scale.

Aiming to bridge the gap between the end of the research & development (R&D) phase and full commercialisation, NER 300 provided low-carbon technologies with financial support at a crucial stage in their development. NER 300 also wanted to leverage a considerable amount of private investment and national co-funding across the EU.

The European Commission (EC) was responsible for the overall programme implementation, which was also supported by the European Investment Bank (EIB) and Member States. The EIB evaluated project proposals, sold NER 300 allowances and managed the revenues, while Member States liaised directly with the project sponsors.

The programme is still running. Even though new applications are no longer possible, there are currently EUR 436m of unused funds that will be made available to existing financial instruments managed by the European Investment Bank Group.

The Commission's proposal for the revision of the EU emissions trading system after 2020 heads towards a renewal of the NER Fund scheme by means of the Innovation Fund, expected to be endowed with 450 million emission allowances. The Innovation Fund would ideally support innovative technologies in carbon capture and storage, renewable energy and energy intensive industry; the implementation of this wider fund should occur before the 2021.

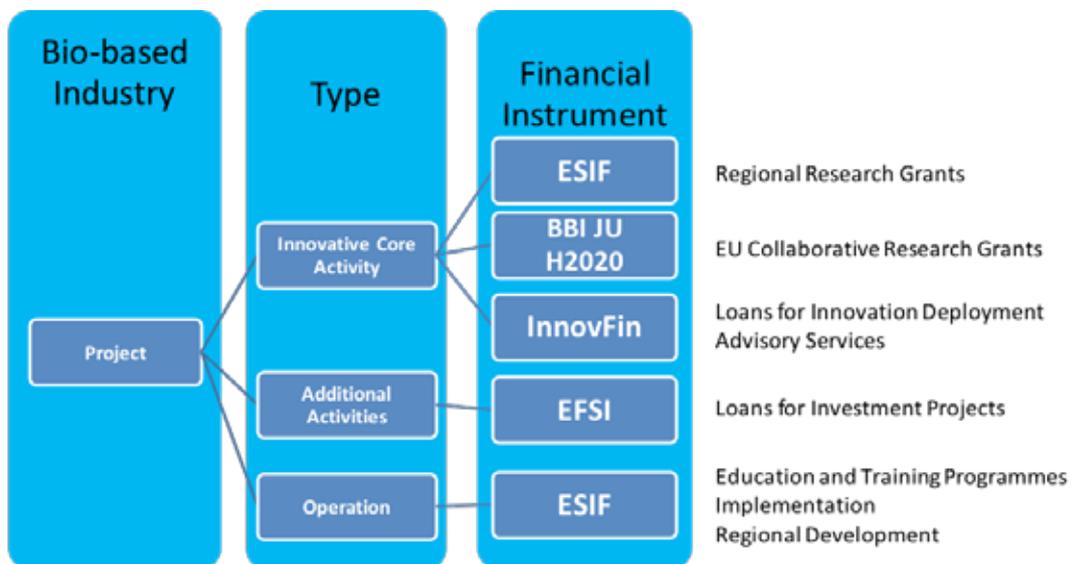


## 8 CONCLUSION

### 8.1 OVERVIEW OF APPLICABLE INSTRUMENTS

Applicable instruments for financing respective bio-based industry projects and enterprises are shown in Figure 8.1.

Figure 8.1: Financial Solutions for Bio-based Industry Projects



EBRD has a range of programmes which can support all of the activities above.

Different options available for financing projects depend on the type of activity which requires funding. Innovative core activities might be funded through Horizon 2020 (grants) or InnovFin (loans and guarantees). Financial support is also provided by some European regions thanks to Structural Funds and their implementation programmes.

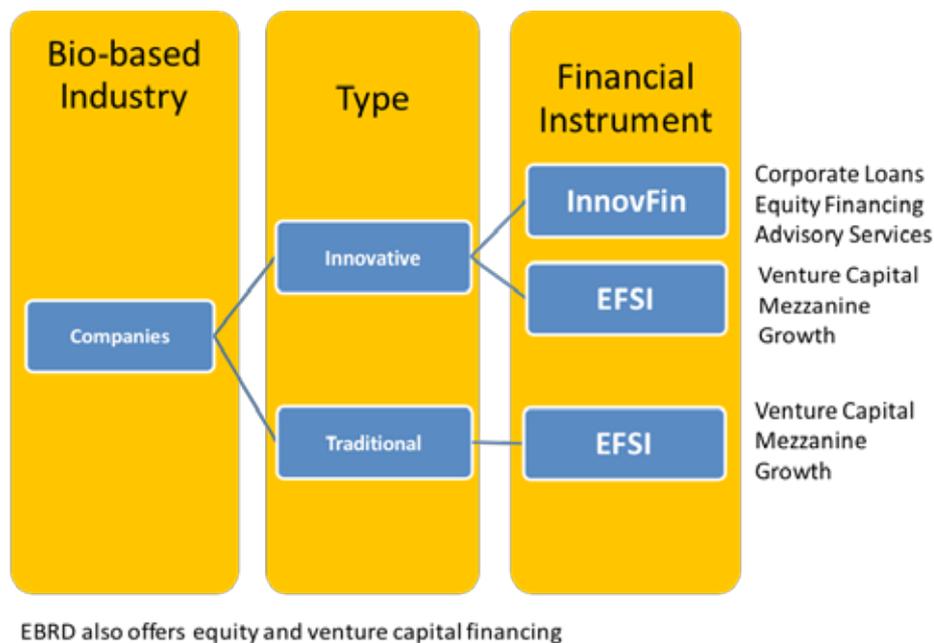
The European Investment Bank Group (EIB Group) has developed InnovFin Advisory with the purpose of guiding its clients on how to structure their R&I projects in order to improve their access to finance. The service helps them to capitalise on their strong points and adjust elements such as their business model, governance, funding sources and financing structure to improve their access to finance. InnovFin Advisory also provides advice to improve investment conditions through activities which are not project-specific, such as developing a business case for new financing mechanisms and preparing studies on increasing the effectiveness of financial instruments to address specific R&I needs.

Additional activities which are not innovation related e.g. equipment, civil works, accessibility, etc. might be still financed through the European Fund for Strategic Investments. Loans are available at the EIB or through national financial intermediaries for smaller size investments.

Education and training activities are often supported by European regions, whose resources are made available by the Structural Funds. Some European regions are also using Structural Funds to guarantee debt instruments, bolstering investments in both traditional and innovative activities. Using these instruments is subject to terms and conditions which are investigated on a case-by-case basis.

Figure 8.2 shows the different opportunities for companies to access solutions to support their growth. Companies may use financial instruments based on forms of debts or equity. To this extent, InnovFin and EFSI offer products suitable for innovative companies in the Bio Based sector, to support their growth. In general, equity and debt instruments may be combined with grants contracted to the same company. More details and information on the instruments are provided in this report.

**Figure 8.2: Financial Solutions for Bio-based Industries**



Another potential source for both project and corporate financing is the European Bank for Reconstruction and Development (EBRD), which offers a range of financing products (loans, equity, guarantees or hybrid structures) customised at project level. This is complemented by technical, financial and policy support and, if required, donor-provided concessional or grant co-financing.

## **8.2 SYNERGIES BETWEEN FUNDING PROGRAMS**

Synergies are a way to increase a project's impact and maximise public investments. Horizon 2020 (H2020) encourages synergies with national and regional programmes to bring together funding from different sources for industrial projects.

### **8.2.1 Synergies Between Horizon 2020 and ESIF**

The possibility of combining H2020 and ESIF funding mechanisms for research & innovation (R&I) was investigated in the 2014 BIC report 'Combining BBI (H2020) and European Structural and Investment Funds (ESIF) to deploy the European bioeconomy'. For most projects, it is more realistic to think about future collaboration e.g. taking up the exploitation activities of a H2020 project with ESIF funding.

### **8.2.2 Synergies Between EFSI and ESIF**

Combining support from ESIF delivered through a financial instrument and EFSI (i.e. in an investment platform) means separate records must be maintained.

ESIF financial support must be part of an operation with eligible expenditure distinct from the EFSI support. Therefore, EFSI project support cannot count as national co-financing of an ESIF programme or be declared as an eligible expenditure. In such a case, national co-financing of an ESIF programme could still be provided through another EIB Group financial product – a Structural Programme Loan or through intervention at project level.

Any additional resources leveraged by combined ESI Funds and EFSI interventions can be treated as national co-financing for the ESIF programme, e.g. if an ESIF financial instrument receives a parallel investment from EFSI and both interventions trigger additional co-investments by other investors (public and private). If these additional co-investments are not supported by the EU budget – but are directly linked to the ESIF intervention – they can be treated as national co-financing for the ESIF programme, provided that resources are paid out to final recipients in line with the applicable rules (CPR, respective ESI Fund program, national eligibility rules and funding agreement).

For the European Agricultural Fund for Rural Development (EAFRD), co-financing for the programme only takes public resources into account at the level of the managing authority. ESIF can be used to support the risk-bearing capacity of an EFSI Investment Platform in the form of a layered fund and leverage other sources of finance, most notably private investors as well as National Promotional Banks.

#### **8.2.2.1 ESIF and EFSI Combination at Project Level**

ESI Funds may be combined with EFSI when eligible. Combining EU support should result in an overall higher added value of EU funds. There will also be cases where this complementarity will lead to co-investing EFSI resources with ESIF programme support in one project. This may occur for certain countries or sectors where associated risks would make it difficult to grant EFSI support without the presence of ESIF programme contributions.

#### **8.2.2.2 Combining ESIF and EFSI at Financial Instrument or Investment Platform Level**

ESIF and EFSI may also be combined at a higher level e.g. through a financial instrument or investment platform, in line with EFSI Rules applicable to operations with Investment Platforms and National Promotional Banks or Institutions, approved by the EFSI Steering Board.

These financial instruments and investment platforms could be set up at a national, regional or supra-regional level. The use of ESIF programme resources must be in line with the ESI Funds regulatory framework and the priorities of the participating programmes implying inter alia national or sub-national geographical restrictions. Other investor contributions may also be considered at financial level for the implementation of investment platforms.

### **8.2.3 Synergies Between InnovFin and EFSI**

The EIB InnovFin product portfolio is composed of four products which represent the main synergies with EFSI. The InnovFin MidCap Guarantee has a similar product to EFSI's Risk Sharing. Two new facilities implemented by the EIB Group have a minimal overlap with EFSI: InnovFin Science and InnovFin Emerging Innovators. InnovFin Science strengthens the InnovFin focus on research organisations, including public entities. InnovFin Emerging Innovators targets countries labelled Moderate or Modest Innovators in the European Innovation Scoreboard or a Horizon 2020 Associated Country. Specific R&I infrastructure projects may be located elsewhere if carried out by entities based in an InnovFin Emerging Innovators participating country. The fourth product, InnovFin Corporate Research Equity, aims to increase the supply of equity-type financing under the European Fund for Strategic Investments (EFSI). The financing must support an underlying R&I programme and consist of an equity type operation under EFSI.

Combining InnovFin and EFSI finance is also being explored, with InnovFin used as a junior tranche to credit-enhance EFSI equity-type deployments. This would potentially unlock new financing options in risk-sharing for corporate R&I and corporate venture. The equity side of operations, implemented by EIF, has also been remodelled to improve its relevance to a wider range of constituencies.

## **8.3 EXAMPLES OF COMBINED PROJECT FUNDING**

### **8.3.1 FIRST2RUN**

Company: Novamont S.p.A.

Combined Fund: H2020 – EFSI

Project description and objectives:

FIRST2RUN is focused on deploying innovative process technologies for producing bioplastics and biochemicals, which can be used in a number of industrial applications e.g. plasticisers, biodegradable lubricant oils for industry and vehicles and consumer goods e.g. renewable and biodegradable base for cosmetics, carrier bags, films and packaging.

The project costs totals €130 million, of which €60 million will be financed by the EIB, through EFSI. FIRST2RUN has also been granted almost €17 million by the European Commission through H2020.

### **8.3.2 EFFORTE**

Company: Metsä Fibre

Combined Fund: H2020 – EIB Loan – EFSI Guarantee – State Grant

Project description and objectives:

Aiming to create a bio-based product pulp mill in Finland to manufacture softwood pulp for the paper industry, EFFORTE also wants to use by-products from the pulping process to generate and sell renewable electricity. The mill would then be able to operate without burning the heavy fuel oil normally used by pulp mills and use less energy per unit of output, compared to similar plants. The plant will be fully energy self-sufficient and feed renewable electricity into the Finnish grid.

Project costs total €1.2 billion. The EIB loan is €275 million and €75 million is guaranteed from EFSI. The H2020 grant to EFFORTE is €2.2 million. The Finnish Government also plans to grant €32.1 million.



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