

## BioBase4SME Innovation coupons

### Terms of reference

#### Contents

1. Characteristics of the innovation coupon .....	2
2. Areas for application .....	3
3. Procedure for application .....	3
4. Procedure for selection .....	4
5. Criteria .....	5
6. Feedback obligations .....	5
7. Financial details .....	5
8. Contact details of bio-innovation agents .....	6
9. Description of coupon services .....	6
1. Bio Base Europe Pilot Plant .....	6
2. Materia Nova .....	7
3. NNFC, the bioeconomy consultants .....	7
4. Association des Chambres d’Agriculture de l’Arc Atlantique .....	8
5. tcbb RESOURCE .....	9
6. REWIN projecten BV .....	9

## 1. Characteristics of the innovation coupon

The project BioBase4SME (<http://www.nweurope.eu/projects/project-search/bio-innovation-support-for-entrepreneurs-throughout-nwe-regions/>)

is funded under the Interreg NWE program. Interreg NWE is a European Territorial Cooperation programme with the ambition to make the North-West Europe area a key economic player and an attractive place to work and live, with high levels of innovation, sustainability and cohesion ([www.nweurope.eu](http://www.nweurope.eu)). Within BioBase4SME, innovation coupons are offered to SME's and start-ups. These coupons provide access to innovation services for obtaining proof-of-concept of a promising technology, and for developing a strong business strategy. The offered services can be summarized as follows:

Table 1

	Service Provider	Short service description	Service value (€) % of support
1	Bio Base Europe Pilot Plant (Belgium)	Technological scale-up and industrial proof-of-concept in an open access multipurpose pilot plant. From lab to ton scale.	€ 100.000 max 50% support
2	Materia Nova (Belgium)	LCA (environmental life cycle assessment) + Eco-Design	€ 25.000 max 50% support
3	NNFCC, the bioeconomy consultants (UK)	Market research, Value chain assessment, Business plan coaching	€ 10.000 max 50% support
4	Association des Chambres d'Agriculture de l'Arc Atlantique (France)	Developing dialogue with stakeholders; + Creating social acceptance for innovative investments	€ 25.000 max 50% support
5	tccbResource (Ireland)	Anaerobic digestion tests and pyrolysis tests in dedicated (pre-)pilot lines.	€ 100.000 max 50% support
6	REWIn projecten BV (the Netherlands)	Application testing for fibres (paper/composites), bioplastics, lignin, colorants and bio-based solutions (e.g. herbicides, degradable bioplastics).	€ 4.000 100% support

The main characteristics of the innovation coupon are

- The coupon is used to support a biobased innovation. 'Bio-based' is defined as
  - the raw material is of biological origin or,
  - industrial biotechnology (fermentation or biocatalysis) is used in the process
- All **small and medium enterprises** (SME's), and potential **start-ups from North West Europe** can apply. An enterprise is a SME when having a staff headcount below 250, a turnover below or equal to € 50 million or a balance sheet total below or equal to € 43 million. These ceilings apply to the figures for individual firms only. Being part of a larger group or shareholder structure might influence the total count.  
The EU definition of SME can be found here: [http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition\\_is](http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_is)  
Potential start-ups are defined as 'almost SMEs with a promising technology and a concrete spin-out plan'.
- The coupon can comprise multiple services from the service table, that are evaluated individually through the monthly evaluation board meeting.

- The **maximum service value per entity is € 100.000** for the BioBase4SME project lifetime.
- **Coupon aid is regarded as ‘de minimis aid’**: the ‘de minimis rule’ allows for state aid, but only if of minimum financial importance: the total amount of ‘de minimis aid’ granted per EU member state to a single undertaking shall not exceed € 200.000 during the current fiscal year and the previous two fiscal years.

Undertakings dealing in the sectors of fisheries and aquaculture, the primary production of agricultural products cannot be granted ‘de minimis’. More information on de minimis can be found here: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:l26121>

- The coupon is awarded to projects with a well-defined innovation aim and a convincing business opportunity.
- Applications can be submitted daily from 1/9/2016 until 24/05/2019 (while coupons for the specific service lasts; first come first served).
- Applications are evaluated on a monthly basis: They need to be submitted before the last Friday of the month to be evaluated in the next month.
- Applications are evaluated by the management board of the BioBase4SME project.

## 2. Areas for application

There is no preference for certain domains or application fields, as long as the process is bio-based. Bio-based is defined as

- (i) either the raw material is of biological origin, or
- (ii) industrial biotechnology (fermentation or bio catalysis) is used in the process.

## 3. Procedure for application

- The call is continuously **open from 1/9/2016 until 24/05/2019 (while coupons for the specific service lasts; first come first served)**.
- The SME is strongly advised to discuss the application with their regional bio-innovation agent (see list per region below) prior to its submission. The bio-innovation agent will assist the SME during the application process, and formally present the application to the BioBase4ME management board for approval.
- Upon request of the assisting bio-innovation agent, the SME is invited to discuss their coupon application with the respective service provider. This discussion will define if the service provider can offer the required service, and what value corresponds to the service (€ 100.000 max). Upon request of the SME, a Confidential Disclosure Agreement (CDA) is signed by the service provider(s), the SME, and the bio-innovation agent to protect the confidential nature of information exchange during these discussions.
- The SME drafts the coupon application, based on the discussions with the service provider(s) and the bio-innovation agent, according to the outline provided in the bio-innovation coupon guidelines, and sends it to its bio-innovation agent. **The coupon application is submitted when the bio-innovation agent that assists the SME sends it to the BioBase4SME coordinator.**

#### 4. Procedure for selection

- Once a month, the BioBase4SME partners meet to discuss the coupon applications. **It is possible that the SME is contacted by telephone during the meeting, to answer questions that the partners might have.** All BioBase4SME partners are bound by confidentiality regarding data provided by companies. The assisting bio-innovation agent presents the coupon application to all partners of the BioBase4SME project, who evaluate each coupon application based on the selection criteria mentioned below.
- Each partner has 1 vote. For a coupon to be granted, 6/8 partners need to be in favour. The service providers have the right to refuse the project on certain grounds (e.g. due to safety concerns). The reason for refusal will be commented in the feedback towards the SME from the assisting bio innovation agent.
- After the meeting, the assisting bio-innovation agent informs the SME about the outcome. When the coupon is not granted, the SME receives feedback about why the coupon was withheld.

**When the coupon is granted, the SME will receive the following documents:**

- 1) A contract between the coupon-receiver and all service providers, stipulating what will be done for each service.
  - 2) A 'de minimis' self-declaration document: as the coupon aid is regarded as 'de minimis aid', the SME will need to list all 'de minimis' aid received during the last three fiscal years. No more than € 200.000 of 'de minimis' aid can be received during three rolling years.
  - 3) SME declaration form to be signed by the SME to declare that the company is an SME.
- The SME delivers the three signed documents ('de minimise self-declaration, SME declaration and contract) to the following address:
    - A scan of the signed documents by email:
    - The original documents by regular mail:

<b>By email</b>	<a href="mailto:tanja.meyer@bbeu.org">tanja.meyer@bbeu.org</a>
<b>By regular mail</b>	Tanja Meyer Bio Base Europe Pilot Plant Rodenhuizekaai 1, 9042 Gent, Belgium

- The SME contacts the service providers to schedule the work. The work from the service provider has to be fulfilled by the latest 2 months before the end of the project (24/07/19).
- **After the tests are done, the SME receives the following documents:**
  - 1) A report for each test from the service provider
  - 2) An invoice from each service-provider for the co-financing of the coupon
  - 3) A 'de minimis' award letter, to be kept for 10 fiscal years from the date the aid was granted. The amount of the 'de minimis' aid has to be considered for future applications for any 'de minimis' aid.

## 5. Criteria

Each application is evaluated on the following criteria. All selection criteria have the same weight in the decision.

Criteria	
<b>SME or start-up located in North-West Europe territory</b>	Eligibility criterium
<b>Compliant with 'de minimis' aid</b>	Eligibility criterium
<b>The business opportunity of the idea (competitive differentiation and impact)</b>	Selection criterium
<b>The technical feasibility of the idea, chances of success</b>	Selection criterium
<b>The innovativeness of the concept</b>	Selection criterium
<b>Ability/potential of the entrepreneurial team</b>	Selection criterium

Applications are judged on aforementioned criteria primarily. In case the remaining funds become limited (towards the end of the selection scheme), the representation of the different NWE countries will be used as an additional criterion to select among proposals of equal quality.

## 6. Feedback obligations

For the BioBase4SME project to achieve meaningful results and collect evidence for capitalisation, feedback from each supported company will be collected. The feedback will be requested by email, upon sending the report and 1 year after the test. Amongst others, the following feedback will be asked for:

- Did the feasibility study resolve the issue that you described in the coupon application?
- Did the feasibility study enhance the innovation trajectory of your company?
  - No: Why not?
  - Yes: How did it enhance the innovation trajectory?
- Can you give an indication about how you are going to use these results? Please describe the following aspects:
  - A short description of your trajectory to valorising the results of the feasibility study
  - How will the feasibility study results be used in commercialisation process?
  - What barriers do you still need to overcome before commercialisation of process/product?
  - What time-frame do you envision for commercialisation of process/product?

## 7. Financial details

Innovation services 1 - 5 (see table on page 1) are covered for 50% by the BioBase4SME project, 50% of the net value needs to be co-financed by the enterprise to support the action. An invoice will be sent by each service provider after the work has been carried out. Innovation service 6 is covered in full by the project. The maximum service value per company is € 100.000 for the BioBase4SME project lifetime. Coupon aid is regarded as 'de minimis aid'. Undertakings dealing in the sectors of fisheries and aquaculture, the primary production of agricultural products cannot be granted coupon aid.

## 8. Contact details of bio-innovation agents

Name	Region	Contact
Association des Chambres d'Agriculture de l'Arc Atlantique	France, Switzerland (French speaking part)	Pascal Dagon <a href="mailto:contact@ac3a.chambagri.fr">contact@ac3a.chambagri.fr</a>
CLIB2021	Germany, Switzerland (German speaking part)	Katrin Kriebs <a href="mailto:Kriebs@clib2021.de">Kriebs@clib2021.de</a>
Flanders Biobased Valley	Flanders	Sofie Dobbelaere <a href="mailto:sofie.dobbelaere@fbbv.be">sofie.dobbelaere@fbbv.be</a>
Materia Nova	Wallonia, Luxembourg	Olivier Talon <a href="mailto:Olivier.Talon@MATERIANOVA.BE">Olivier.Talon@MATERIANOVA.BE</a>
NNFCC, the bio-economy consultants	United Kingdom	Lucy Montgomery <a href="mailto:l.montgomery@nnfcc.co.uk">l.montgomery@nnfcc.co.uk</a>
tcbb RESOURCE	Ireland	Pádraic O Huiginn <a href="mailto:pohuiginn@tcbb.ie">pohuiginn@tcbb.ie</a>
REWIn projecten BV	The Netherlands	Roel Koevoets <a href="mailto:R.Koevoets@rewin.nl">R.Koevoets@rewin.nl</a>
Bio Base Europe Pilot Plant	(coordinator)	Tanja Meyer <a href="mailto:tanja.meyer@bbeu.org">tanja.meyer@bbeu.org</a>

## 9. Description of coupon services

### 1. Bio Base Europe Pilot Plant

<b>Bio Base Europe Pilot Plant</b>	<b>€ 10.000 - € 100.000</b>
<a href="http://www.bbeu.org/pilotplant/">http://www.bbeu.org/pilotplant/</a>	<b>50% covered by project</b>
<p><b>Technological scale-up and industrial proof-of-concept:</b> Development and scale up of biobased processes i.e. biomass pretreatment, fermentation, biocatalysis, product recovery and purification, if needed under ATEX conditions. The coupon corresponds to a technical feasibility study at pilot scale and can comprise a desktop study, lab work and/or pilot tests performed at Bio Base Europe Pilot Plant.</p> <p>The Bio Base Europe Pilot Plant in Ghent (Belgium) is a flexible and diversified pilot plant for the development, scale-up and custom manufacturing of biobased processes and products. It operates at kilogram to multi ton scale and aims at closing the critical gap between scientific feasibility and industrial application of new biotechnological processes. The Bio Base Europe Pilot Plant is a one-stop-shop that performs the entire value chain in a single plant, from the biomass green resource up to the final bioproduct.</p> <p>The pilot plant is equipped with state-of-the-art equipment to perform biomass pretreatment, biocatalysis, fermentation, up- and downstream purification and green chemistry. It focuses on conversion of biomass (including agricultural crops and by-products, industrial side streams) into biochemicals, biomaterials, biofuels and other bioproducts.</p> <p>The Pilot Plant is situated in the Port of Ghent in Belgium. It is an independent, open innovation pilot plant and is accessible for companies and research institutions throughout the world. In 2014, BBEP was selected by the European Commission as a multi-KET Pilot Lines demonstrator (<a href="http://www.mkpl.eu">www.mkpl.eu</a>).</p> <p><b>The innovation coupons provide</b> access to make use of the facilities and expertise of Bio Base Europe Pilot Plant. This allows your business to assess the feasibility of taking a bio-based idea or a technology into industrial production. The Bio Base Europe Pilot Plant provides testing and production facilities from laboratory to multi ton scale. Bio Base Europe Pilot Plant provides not only technological know-how, but also cost assessment. A full list of the services can be found at <a href="http://www.bbeu.org/pilotplant/services/">http://www.bbeu.org/pilotplant/services/</a>.</p>	

## 2. *Materia Nova*

<b>Materia Nova</b>	<b>€ 8.000 - € 25.000</b> <b>50% covered by project</b>
<p><b>Life-cycle assessment (LCA)</b> of biobased products / processes. The coupon will enable to assess environmental impacts associated with all the stages of a product's life from cradle to grave (i.e., from raw material extraction through materials processing, manufacture, distribution, use, repair and maintenance, and disposal or recycling). LCAs can help SMEs to avoid a narrow outlook on environmental concerns even at R&amp;D or scaling-up stages (e.g. selection of the best environmentally friendly pathway to produce). The LCA service is meant to be used as a tool for eco-designing the developed product/process and will provide results that may <i>in fine</i> be used for product environmental footprint declaration.</p>	
<p>Materia Nova will provide possibilities for SMEs in between:</p> <ul style="list-style-type: none"><li>- <b>Limited LCA analysis (e.g. ecological footprint of new product compared to existing one 25 k€);</b></li><li>- <b>Small assessment of potential impacts (8 k€).</b></li></ul>	
<p>Established by the University of Mons, Belgium, Materia Nova - Material research and development centre has operated as an autonomous non-profit organisation since 2001 and employs 90 multidisciplinary researchers. A full list of the activities can be found at <a href="http://www.materianova.be">http://www.materianova.be</a> Research teams in MANO are mainly involved in activities linked to biobased products: bioplastics, white biotechnology... and since 2012, Materia Nova has created a Life Cycle Assessment team (YLCA) that has developed within the framework of its R&amp;D projects an expertise in using LCA tools for evaluating the environmental performance of innovations.</p>	
<p>The YLCA team encompasses researchers from every department of MATERIA NOVA and aims to assess at R&amp;D stage the potential environmental impacts associated with final product's life cycle. MANO's LCA team has therefore already an experience in the specific field of biobased products, having performed LCA studies about various subjects such as insulation panels made of flax by-products, processes for extraction of cellulose nanocrystals, polylactide production and recycling or bio-based paints and coatings.</p>	

## 3. *NNFCC, the bioeconomy consultants*

<b>NNFCC, the bioeconomy consultants</b>	<b>€ 10.000</b> <b>50% covered by project</b>
<p>NNFCC is a <b>specialist Bioeconomy consultancy</b> based in York, UK. It offers a range of market research services which can be accessed through the BioBase4SME project.</p>	
<p>NNFCC undertake market landscape reviews providing information on market size, geographical breakdown, product value, key stakeholders and industry trends.</p> <p>Stakeholder mapping exercises are performed to provide insight into key actors with value chains, supply chains or innovation chains. Stakeholder mapping includes competitor and potential collaborator analysis.</p> <p>NNFCC also offer strategic market reviews covering political, economic, social, technological, legal and environmental (PESTLE) considerations, as a basis for trend impact analysis. Strategic reviews are completed with strengths, opportunities, threats and weaknesses (SWOT) analysis and recommendations for next steps.</p>	
<p>For longer term market research NNFCC are also able to offer horizon scan and scenario planning. A horizon scan looks at detecting early signs of potentially important developments through a systematic examination of potential threats and opportunities. An emphasis is placed on exploring novel and unexpected issues as well as persistent problems and trends. This includes matters at the</p>	

margins of current thinking that challenge past assumptions. A horizon scan can provide the background to develop strategies for anticipating future developments and thereby gain lead time.

It can also be a way to assess trends to feed into a scenario development process.

Scenario planning is not about attempting to predict the future, but focusses on examining what potential futures might look like. The basis of scenario planning lies in combining the known and the unknown into views of the future that span a very wide range of possibilities. Scenario planning raises awareness of possible futures and allows organisations to produce better business strategies.

#### 4. Association des Chambres d'Agriculture de l'Arc Atlantique

Association des Chambres d'Agriculture de l'Arc Atlantique	€ 10.000 - € 25.000 50% covered by project
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**Social acceptance:** Creating new bio products and integrating it in SME's catalogue has necessary marketing needs. Circular economy thinking is a new way that many people are unfamiliar with. Creating social acceptances can be defined as avoiding neighborhood opposition against the new production in their vicinity.

#### **Objectives:**

- Complete the SME manager with skills in Social acceptance by training.
- Provide the SME a complete panel of technologies, marketing tools to obtain social acceptance.
- Use Social acceptance to avoid investments that will be protested against by the neighborhood thus decreasing SME development risks.
- Get the neighborhood interested in the new products (local customers).
- Develop SME manager behavior skills on social acceptance: an attitude to inform and consult local stakeholders

#### **Programme:**

The group: Preparation plan for inviting neighbors, local associations, and local customers (includes invitation support).

The method: General method step 0 to step 5

The tool box: Work plan, initial tools and meeting rules to prepare step 0.

Issue note: Preparation of the Issue Note stipulating SME activities, SME market, new bio products to prepare step 1. This note is sent together with the invitation.

Deliverables: Detail of step 1 to 5 deliverables

A workshop on managing the group, debriefing of workshops deliverable, preparing next step with the previous deliverables.

Evaluation and impact on the SME development

**Pedagogical method:** A professional trainer with background on group management, feedback from participants, discussion about what to do or not.

**Target public:** SME manager or public relation

**Required knowledge:** Knowledge about aimed public, SME activities, bio product risks and origins.

**Duration:** 3 days

**Evaluation support:** SME managers stay in contact with the consultant to answer questions when developing method themselves.

## 5. tcbb RESOURCE

<b>tcbbRESOURCE</b>	<b>€ 10.000 - € 100.000</b> <b>50% covered by the project</b>
<b>Anaerobic digestion and pyrolysis tests</b>	
<p>TCBB RESOURCE will operate two central pre-pilot test lines at an integrated pre-pilot facility to provide advanced anaerobic digestion and pyrolysis tests.</p> <p>These test lines will be available in a co-located facility allowing for integrated pre-pilot testing, using both advanced anaerobic digestion and pyrolysis to assist innovators with preliminary process development, scale-up and validation (TRL4) prior to engaging sophisticated pilot plant resources for final process optimization.</p> <p>TCBB RESOURCE will provide industrial proof of concept tests bringing bio based developments from Technology Readiness Level (TRL) 4 (validated in lab) up to TRL 6 (demonstrated in a relevant environment). Basic research and commercialisation are thus excluded.</p> <p>The services at the integrated pre-pilot will be of benefit to the following SME sectors across all of the North-West Europe region: e.g. dairy processing facilities for low-temperature, high-rate AD wastewater treatment; cheese producers for whey by-products for functional foods and nutraceuticals; apple and other fruit processors (fruit pulp); brewers; marine and sea fisheries sector; forestry wastes and by-products.</p>	

## 6. REWIN projecten BV

<b>REWIN projecten BV</b>	<b>€ 4.000</b> <b>100% covered by project</b>
<b>REWIN West-Brabant</b> is a regional development agency. It will not perform the services itself, but will source ' <b>Application testing</b> ' to the Biopolymer application centre, the Colorants application centre, the Natural fibres application centre, the Biobased Innovation Garden and Biorizon Lignin Application Center.	
<p>The following list of facilities are just an indication of what the Application Centers could offer. The centers characterize themselves by pragmatism and their extensive network which means they can offer more than is possible to inventory.</p> <p><b>BAC (Biopolymer Application Center)</b></p> <ul style="list-style-type: none"> <li>- Material selection</li> <li>- Material research</li> <li>- Product design</li> <li>- Product prototyping</li> <li>- 3D design and printing</li> <li>- 3D scanning</li> <li>- Injection molding</li> <li>- Compounding</li> <li>- 3D printing of trial mold</li> <li>- Proof of concept with trial mold</li> <li>- Market research and exploration</li> <li>- Campaign development</li> </ul> <p><b>KIAC (Colorants Application Center)</b></p> <ul style="list-style-type: none"> <li>- Development of new applications using bio colorants</li> <li>- Extracting of biobased colorants</li> <li>- Determining of properties by ISO-standards</li> <li>- Advise and support for research of new biobased colorants</li> <li>- Facility sharing</li> </ul> <p><b>NAC (Natural Fibers Application Center)</b></p> <ul style="list-style-type: none"> <li>- Recipe and business case development for paper, cardboard and composites (thermoplast and thermoset)</li> </ul>	

- To process fibers the facilities: grinders, refiners, milling, pilot paper machine (till 50 kg) and a 3D heat press
- Knowledge and laboratory equipment to qualify the properties of fibers.
- 3D-printer

**Rusthoeve, Biobased Innovation Garden**

- Material selection
- Breeding crops
- Optimization of breeds
- Connection industry to farmers
- Storing of biobased raw materials
- Searching for new applications

**Biorizon Lignin Application Center**

- Analytics and characterization throughout the value chain
- Purification of lignin-derived streams
- Fractionation of mixtures of bioaromatics from conversion of wood/lignin
- Modification/functionalization of lignin derived streams/fractions
- Polymerization of lignin derived streams/fractions
- Application testing of lignin derived molecules/polymers
- Lab and pilot infrastructure