



01 THE CHALLENGE

Several supporting activities can contribute to unlock the innovation potential of industries (in particular of SMEs and start-ups) in the bio-based sector, reducing the operational costs and increasing their competitiveness. These activities include open access research infrastructures, where interested parties can take advantage of operating equipment and facilities they may need, to carry out lab, test or pilot work.

Recent European projects promote open innovation and access to open research infrastructure, either by informing about their existence, subsidising (small and medium) industries to use them, or brokering bio-based industries and downstream sectors. Some of these projects provided additional services, including the promotion of networking opportunities, knowledge transfer and capacity building for SMEs and start-ups.



02 HOW COORDINATION AND SUPPORT ACTIONS (CSAs) ADDRESS THE CHALLENGE

Networking of Shared Research Infrastructure

Pilots4U (BBI JU) set up a **network of open access pilot and multipurpose demo-infrastructures** with Europe-wide coverage (in collaboration with ERIFORE and SmartPilots projects). Pilots4U analysed the current capabilities of these infrastructures as well as the needs of the European bio-based industry for them. The project will also produce a gap analysis to identify deficiencies in the existing provision of bio-economy scale up equipment and process plant, and a plan with remedies, actions and proposals for bridging the identified gaps.

ERIFORE (H2020) aimed to establish open access distributed forest bioeconomy research infrastructure across Europe. The project assessed (1) sources of forest-derived biomass and their availability and (2) existing expertise and equipment of project partners on the processing steps to convert forest biomass into valuable end products. Main result is the preparation of a plan for an **European Strategy Forum on Research Infrastructures** project to establish a globally competitive, open access distributed research infrastructure in the field of forest-based bioeconomy. The **design study** work was based on extensive mapping of research needs and drivers, availability and development needs of existing research infrastructure and collaboration in the field of circular forest bioeconomy.



Voucher Schemes

SmartPilots (Interreg) aims at improving policies in support of shared pilot facilities to increase their impact on the Industrial Biotech sector and the European Bio-economy. During the first two project's years partners made a regional analysis of availability and use of funding mechanisms for shared pilot facilities and their users. They compared and discussed results and exchanged best practices, and documented these in regional **factsheets**, used to draw up regional action plans. During the last two project's years the developed regional **action plans** are implemented and the results monitored.

SuperBio (H2020) supported cross sectorial and cross border new bio-based value chains by offering vouchers to be spent on technical and non-technical services aimed at supporting the commercialisation of innovation by SMEs. Consortium partners offered the following ten professional innovation support services: scale-up and proof-of-concept, IP support, life cycle assessment, techno-economic appraisal, feedstock analysis, market research, sustainability appraisal, regulatory landscape evaluation, business planning, access to investors and grant writing.

Bio Base NWE (Interreg) provided networking opportunities and technological solutions to SMEs in the bio-based industry, identified hurdles that SME encounter during their innovation track and translated these into **policy recommendations**. Web-based training tools (process simulation and e-learning) were also developed. Bio Base NWE successfully implemented an Innovation Voucher Scheme, for feasibility studies and scale-up work at the Bio Base Europe Pilot Plant in Ghent, Belgium, to validate innovative bio-based technologies and scale them up to an industrial level. This innovation voucher scheme became a very attractive support mechanism for many SMEs, and was expanded in the BioBase4SME project (see below). In 2017, the BioBased NWE project was recognised with a Regiostars award for "Smart Specialisation for SME Innovation".

BioBase4SME (Interreg) advised SMEs from across North-West Europe on how to develop new ideas into marketable products. The project aimed to help start-ups and SMEs to overcome technological and non-technological barriers to bring their innovation to market. In this context the project developed a report on **needs & challenges of SME companies** in the bioeconomy.

The project offered: free workshops and professional training, Innovation Biocamps and Innovation vouchers. The support offered through the innovation vouchers could include: Technical assistance such as scale-up to pilot scale, Life Cycle Assessment, Techno-economic evaluation, Market research, Feedstock analysis, Social acceptance, Business planning and business plan support, or a combination thereof. As result of the work in the project, it was produced a joint strategy and action plan containing **policy recommendations to stimulate the bio-based economy in North West Europe**.



03 MAIN OUTCOMES FROM THE COORDINATION AND SUPPORT ACTIONS (CSAs)

- An analysis (database) of current capabilities of open access research infrastructures and the needs of the European bio-based industry for them.
- Start-ups and SMEs facilitated to bring their bio-based innovations to the market by providing (subsidised access to) open access research infrastructures and tailored supporting services (vouchers).
- Gap analysis, plans and recommendations for expanding open access bio-economy scale up equipment and process plants.
- Collaboration among technology providers and local clusters.

04 GAPS TO BE ADDRESSED

- Insufficient analysis and understanding of the effectiveness of shared research platforms and facilities in supporting the industrial fabric in the bioeconomy.
- Lack of integration among political and industrial strategies and available shared research facilities that could ease the scale-up of small industries.
- The potential added value of a specific shared research platform/facility is not sufficiently clear, transparent and attractive to the intended beneficiaries.
- Except for Eastern Europe there is no lack of open access pilot and demo facilities per se, but rather a strong need to further strengthen and invest in existing open access infrastructures to keep them state-of-the art and increase flexibility.
- Good quality, reliability and availability of shared data in existing online platforms is perceived as not sufficiently ensured.
- Lack of mechanism to incentivise the sharing of valuable data in online platforms. There is concern about Intellectual property rights (IPR) issues.
- Vouchers schemes mainly target smaller sized companies in specific regions.

05 RECOMMENDATIONS

- In a political and industrial wider strategy for regional bioeconomy development, the role of shared-research facilities and open platforms should be valorised as a solution **to reduce technological risks and investments needed at early stages or to scale-up.**
- **The potential of existing open access infrastructure could be optimised**, by analysing their effectiveness, developing new business and exploitation pathways, increasing flexibility to handle a variety of feedstock, guaranteeing state-of-the art technologies, and promoting collaboration and networking among existing facilities (building on Pilot4U experience). The **risks of duplication can be minimised** by creating collaborative networks that own complementary infrastructures within a specific value chain.
- To maximise the investments in and the potential of existing facilities, **better mobility of funding across Europe**, especially on a cross-regional basis, is required, by extending the remit of existing regional funding mechanisms.
- Promote the **collaboration among clusters/companies and service providers** (shared research facilities and open innovation platforms) to facilitate the merge among the available technologies and the requirements, knowledge and networks of local actors.
- **A voucher system** could be established to support industry **to access technical and non-technical innovation support services**. For example, provide vouchers for SMEs and start-ups to benefit from the open access pilot and multipurpose demo-infrastructures identified in Pilots4U.
- Integration of various open innovation resources and platforms in bioeconomy, **providing a single-entry point** to access opportunities.



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COORDINATION AND SUPPORT ACTIONS (CSAs) IN A NUTSHELL

Acronym/logo	Programme	Duration	Website
	BBI JU	Jun 2017 - Aug 2019	www.biopilots4u.eu
	Interreg Europe	Apr 2016 - Mar 2020	www.interregeurope.eu/smartpilots
	H2020	Jun 2016 - May 2019	www.h2020-superbio.eu
	H2020	Feb 2016 - Jan 2018	www.erifore.eu
	Interreg NWE	Mar 2016 - Aug 2019	www.nweurope.eu/projects/project-search/bio-innovation-support-for-entrepreneurs-throughout-nwe-regions/
	Interreg NWE	Jan 2013 - Dec 2015	www.biobasenwe.org/en/home/

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RESOURCES

Network of open access pilot and multipurpose demo-infrastructure. **Pilots4U project**
<https://www.biopilots4u.eu/asset-database>

European Strategy Forum on Research Infrastructures. **ERIFORE project**
https://ec.europa.eu/info/research-and-innovation/strategy/european-research-infrastructures/esfri_en

Infrastructure development plan. Design study (2018) **ERIFORE project**
http://static.erifore.eu/content/uploads/2018/03/ERIFORE-D7.5_AALTO_20180131u3.pdf

SmartPilots Factsheets and Customer Survey Financial Instruments for Shared Pilots Facilities (SPF) in the Bioeconomy. **SmartPilots project Interreg Europe**
http://www.bbee.org/pilotplant/wp-content/uploads/2018/06/Report-on-SmartPilots-Factsheets-and-Survey_Final_14May2018.pdf

Action plans for Flanders regions, province of south Holland, Helsinki-Uusimaa region, Lombardy region. **SmartPilots project Interreg Europe**
<https://www.interregeurope.eu/smartpilots/action-plans/>

Policy recommendations video (May 2017) **SmartPilots project Interreg Europe**
<https://www.youtube.com/watch?v=VKgZM2nlofY>

Policy recommendations video (November 2015) **Bio Base NWE project**
<https://www.youtube.com/watch?v=84UYj4u3P4&feature=youtu.be>

Needs and challenges of companies in the bioeconomy in NW Europe (2018) **BioBase4SME project**
https://www.nweurope.eu/media/7055/needs-and-challenges_final.pdf

Joint strategy and action plan containing policy recommendations to stimulate the bio-based economy in North West Europe. **BioBase4SME project**
https://www.nweurope.eu/media/7098/biobase4sme_action-plan-on-needs-of-smes-in-nweurope.pdf

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