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CAPACITY AND SYNERGY ACTION PLAN FOR AN INTEGRATED ACCESS FROM LAB TO PILOT SCALE



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Abbreviations and Acronyms

Abbreviation / Acronym	Description
BIs	Bioinnovators
BIC	Bio-based Industries Consortium
CBE-JU	Circular Bio-based Europe Joint Undertaking
COPILOT	CO-creating the next generation platform of PILOT and demo infrastructures, unlocking faster innovation and EU bioeconomy growth
EC	European Commission
EGTI	European Commission Expert Group on Technology Infrastructures
EU	European Union
ESFRI	European Strategy Forum on Research Infrastructures
LCA	Life Cycle Assessment
IP	Intellectual Property
PDIs	Pilot and Demo Infrastructures
RIs	Research Infrastructures
SMEs	Small and Medium-sized Enterprises
SRIA	Strategic Research and Innovation Agenda
TEA	Technology Evaluation Assessments
TI	Technology Infrastructure

1 Introduction

The European bioeconomy is experiencing rapid growth, driven by the need for sustainable processes and innovative technologies that can replace fossil-based resources. Central to this growth are Pilot and Demo Infrastructures (PDIs), which serve as crucial intermediaries between laboratory-scale research and full-scale industrial production. PDIs provide the facilities, expertise, and support necessary for Bioinnovators (BIs) to scale up their technologies, validate processes, and accelerate the commercialization of bio-based products. In recognition of the vital role that PDIs play in advancing the bioeconomy, the COPILOT project has been initiated to enhance collaboration and resource sharing among these infrastructures.

COPILOT aims to create a more interconnected network of PDIs to facilitate access to state-of-the-art facilities and foster innovation across Europe. The work is based on Pilots4U platform and database was established as a part of Pilots4U EU project¹ (2017-2019). The aim of Pilots4U database was to map and connect existing PDIs through a comprehensive database and communication platform, that serves as a centralized resource where BIs can identify and access the facilities best suited to their scaling needs. By providing detailed information on PDIs' equipment, capacities, and services, Pilots4U enhances transparency and encourages collaboration within the bio-based industry.

This reports details outcome of work to develop a COPILOT integrated and efficient ecosystem (Infrastructures, Innovators and Enablers), for testing, scale-up and demonstration of biobased processes and presents action plan for activities to be implemented within COPILOT network. Work based on utilising data collected presented in previous deliverables 1) Identifying and mapping PDIs beyond the P4U database, with special focus on underrepresented regions (D1.1 and D1.2), 2) Mapping relevant RIs, networks and related initiatives for bio-based processes and analysing synergies from RIs to PDIs ensuring the need of Innovators to scale-up (D1.3) and 3) Identifying and mapping of Innovators and Enablers from the scale-up ecosystem (D1.4). This report details findings from capacity and synergy assessment and summarises identified complementary elements of technology and research infrastructures in bioprocesses and means to stimulate collaboration and ways bringing them together with user. Practical means to stimulate collaboration are presented in the action plan.

2 Methodology

The goal is to create an integrated ecosystem for testing and scaling bio-based processes. This document (D1.5) outlines the action plan for how the COPILOT project will contribute to this goal. The preparation of this action plan included inputs from various tasks within the COPILOT project, previous projects, the European Commission, and two workshops held by the COPILOT project. A more detailed process is illustrated in Figure 1 and can be summarized as follows:

1. Arranging a workshop “From lab to pilot: co-creating efficient RIs – PDIs collaboration” to collect feedback on needs and means to stimulate the collaboration between RIs and PDIs
2. Conducting a capacity and synergy assessment by reviewing data from various sources and summarising it identify the possible bottlenecks, recommendations and opportunities to create an integrated ecosystem for testing and scaling bio-based processes
3. Arranging a workshop “Integrated Access from Lab to Pilot; COPILOT Workshop to co-create COPILOT action plan for integrated and efficient ecosystem for testing and upscaling bio-based

¹ <https://cordis.europa.eu/project/id/745667/reporting>

processes” to present the outcome from the 1st workshop and synergy and capacity assessment and present the first version of the action plan

4. Combining efforts to finalize COPILOT action plan

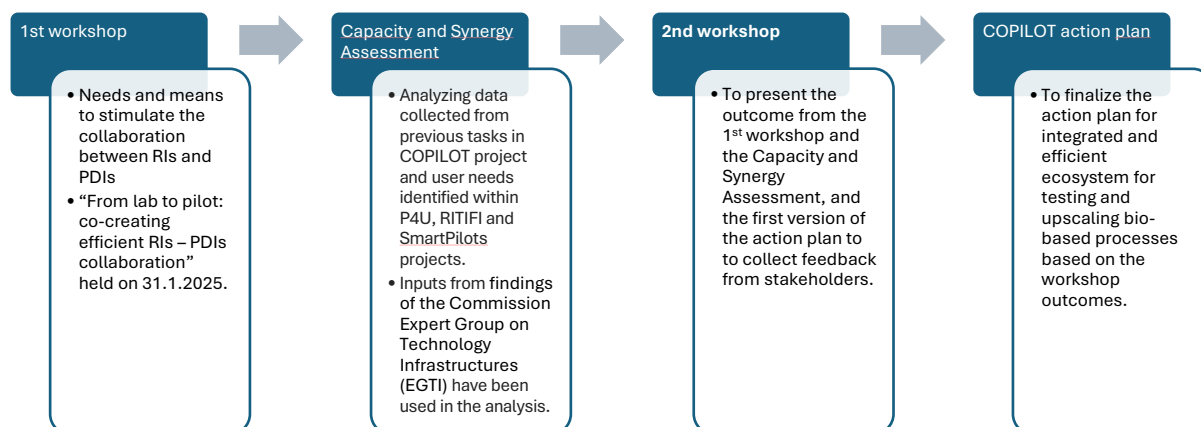


Figure 1 Process to prepare the COPILOT action plan to develop an integrated ecosystem for testing and upscaling bio-based processes.

3 1st workshop

The more detailed description of the 1st workshop “From lab to pilot: co-creating efficient RIs-PDIs collaboration” is given in Deliverable 1.3 REPORT ON RIS, NETWORKS AND RELATED INITIATIVES² in section 4. Workshop organised with research and pilot/demo infrastructure networks. In brief, the aim of the workshop was to collect feedback about needs and means to stimulate the collaboration between RIs and PDIs and develop an efficient ecosystem to integrate RI-PDIs services. The workshop was organized by SPRING in collaboration with the project coordinator (BBEPP) and WP1 leader (VTT). Workshop took place online on January 31st, 2025, from 2-4 pm, and 35 people from RIs and PDIs attended the workshop.

In the 1st workshop especially session 2 “How to cooperate? Let’s brainstorm!” generated relevant data utilized in the action plan. The interactive work with the stakeholders was carried out using a Miro³ board.

The outcome from the session 2 in the workshop is reported in D1.3 “4.3.2 Practical means to enhance collaboration and enable identified strengths and opportunities in framework of COPILOT network” but here are the inputs from the 1st workshop categorized and which were utilized as summarized in the 2nd workshop and action plan:

1. Utilizing the Pilots4U powered by COPILOT Platform” (hereinafter referred to as “COPILOT Platform”)
 - a. Link upcoming funding calls to applicable infrastructure.
 - b. Create dedicated access/profiles for policy stakeholders and funding agencies to post news and opportunities directly and information about key events.

² COPILOT D1.3 REPORT ON RIS, NETWORKS AND RELATED INITIATIVES

³ <https://www.miro.com>

- c. Database for PDIs with links to related RIs and a clear overview of available equipment, facilities, certificates, data availability for LCA, TEA.
 - d. Implement standard questions for database facilities to highlight key operational nuances (e.g., IP, subcontract, scale)
2. Networking and Communication
 - a. Organize networking events such as pitching events to find cooperation partners or investors.
 - b. Provide an easily accessible overview of the RIs and an information channel for key events.
 - c. Share LinkedIn posts and information and invite PDIs and Bioinnovators to COPILOT project events.
 - d. Promote the importance of piloting as de-risking in funding events/forums/initiatives.
3. Enhancing Interaction Between RIs/PDIs
 - a. Monthly network connection lottery for RIs and PDIs to organize meetings and apply joint projects.
 - b. Conduct deep dive studies for evaluating infrastructure and capabilities.
 - c. Promote understanding and support among RIs and PDIs and provide estimates for planning PDI needs in the future.
4. COPILOT supporting RIs and PDIs
 - a. Help RIs find scale-up possibilities and different funding opportunities.
 - b. Highlight complementary capabilities RIs can bring to piloting and scale-up, such as analytical and characterization support.
5. Supporting RIs and PDIs
 - a. RIs Supporting PDIs:
 - i. Analytical and characterization services.
 - ii. Other services such as LCA, recyclability analysis
 - iii. Knowledge-sharing on cross-cutting topics.
 - b. PDIs Supporting RIs:
 - i. Validation of lower TRL experiments.
 - ii. Assess scalability and market potential.
 - iii. Develop a comprehensive roadmap.
 - iv. Share industrial-scale challenges.
 - v. Evaluate innovation impact.
 - vi. Ensure feasibility and sustainability (TEA & LCA).
 - vii. Address stakeholder needs at higher TRLs
6. Communication Channels and Tools
 - a. Implement short pitch webinars per facility with a standard format, available as a library.
 - b. Organize workshops/webinars aimed at promoting success stories and networking events such as matchmaking events.
 - c. Utilize LinkedIn for easy sharing within the network
 - d. Include 360° virtual tours of facilities & direct contact "ask our expert @xy".
7. Funding Sources and Coordination
 - a. Explore potential funding sources such as EU/National initiatives, passionate philanthropists (e.g. Bezos Earth Fund), SCAs for RI/TI collaboration, and crowdfunding.

- b. A funding bulletin board in a newsletter or on Pilots4U as a one-stop shop for small and large funding opportunities.
 - c. Coordinate and exchange information about investments through regular workshops, shared meetings with funders, newsletters, social media, common SharePoint.
 - d. Regular updates of the database.
8. Encouraging Stakeholder Participation
- a. Promote the benefits of participating in the COPILOT network and provide clear communications on specific benefits.
 - b. Highlight facilities offering training and share case studies of success stories using the platform.
 - c. Having free access to typical needs (LCA, TEA) by being an active member.
9. How can ESFRI networks support PDIs?
- a. Provide estimates for planning of PDI needs in future.
 - b. Influencing to policy makers.
 - c. Joint activities - EU Biotech and manufacturing hub.

4 Capacity and Synergy Assessment

Capacity and synergy assessment is based on analysing data collected from previous tasks in COPILOT project⁴ and user needs identified within RITIFI⁵ and SmartPilots⁶ projects as well as inputs from findings of the Commission Expert Group on Technology Infrastructures (EGTI)⁷ have been used in the analysis. The recommendations from the Capacity and Synergy Assessment will be further used to formulate the COPILOT action plan together with the inputs from the 1st and 2nd workshops.

The European Union (EU) has identified a need to develop an ecosystem of infrastructures supporting research, innovation and technology development that enable businesses to develop, scale and commercialise their innovations efficiently highlighting the importance of RIs advancing knowledge and fundamental research and PDIs developing, testing and validating new technologies and innovations as part of this ecosystem. This kind of ecosystem is seen to foster private sector investments in research and innovation. The Commission Expert Group on Technology Infrastructures (EGTI) was set up in November 2023 to advise the Commission on strengthening the EU's technology infrastructure landscape by identifying industry needs, barriers, and investment priorities, and proposing ways to improve access and coordination across the EU. EGTI set out five strategic recommendations based on the work of the group, recent studies, consultations with industry, and research and innovation stakeholders. There were three recommendations which were identified as relevant in the context of our Capacity and Synergy Assessment and COPILOT action plan:

- a. Recommendation 2: Improve access to Technology Infrastructures

⁴ D1.1 (FIRST REPORT ON THE EXISTING PDIS IN PILOTS4U DATABASE AND GAPS IDENTIFICATION), D5.4 (Report on Self-Sustainable Business Model 1), D4.3 (REPORT ON FINANCE ACTORS (FOCUS ON VENTURE CAPITAL) SCOUTED AND THEIR INTEREST IN COPILOT)

⁵ RITIFI EU project D2.1, D2.2 ; <https://ritifi.eu/deliverables/>

⁶ SMARTPILOTS ACTION PLAN for the REGION of Helsinki Uusimaa; <https://projects2014-2020.interregeurope.eu/smartpilots/action-plans/>

⁷ Towards a European Policy for Technology Infrastructures; <https://op.europa.eu/en/publication-detail/-/publication/ebbad86c-ea87-11ef-b5e9-01aa75ed71a1/language-en>

“The Expert Group recommends developing, in collaboration with TI hosts and industrial stakeholders, a European Charter for Access to TIs, tailored to all types of users, that provides guidelines on streamlined access procedures, and simple and transparent access conditions. The group also considers it important to develop support measures to improve the visibility of TIs and the services they can offer across the EU and to increase the opportunities and support for companies to access the infrastructures, including those located in other regions or countries.”

b. Recommendation 3: Develop an effective investment prioritisation mechanism for European Technology Infrastructures

“The Expert Group recommends setting up an EU level investment prioritisation mechanism for TIs that should address the needs of technologies of strategic importance for the EU’s competitiveness and align strategies for their availability and access with the current and future needs of users and existing TI operators. This should support also research and innovation agendas of strategic initiatives such as European Partnerships. Identifying priorities for EU level actions should be guided by a robust set of criteria including strategic relevance, feasibility and impact, industrial ecosystem development, addressing service and facility gaps, and financial viability.”

c. Recommendation 5: Establish funding programmes dedicated to Technology Infrastructures at European and national levels

“The Expert Group recommends that the EU institutions should make available dedicated funding for TIs at European level from programmes supporting R&I and competitiveness and that the Member States consider setting up complementary national and/or regional programmes (including by allocating funding from the European Structural and Investment Funds) to support, among other objectives:

- pooling of public and private funding resources available at EU, national and regional level to support large-scale investments in TIs agreed at the EU level,
- access to TIs for users where funding is an important barrier, such as SMEs, start-ups and scale-ups,
- the development of TI services and upskilling of staff, to strengthen delivery and uptake,
- the collaboration and networking among TIs, and between TIs and RIs.”⁶

RITIFI (Research and Technology Infrastructures for Innovation) is a project aimed at better structuring and integrating the European landscape of Research Infrastructures (RIs) and Technology Infrastructures (TIs) to strengthen R&I ecosystems. It promotes collaboration between RI and TI communities to leverage their complementary strengths.

RITIFI’s D2.1 *Case studies on RI-TI integration and collaborative service delivery models*,⁴ analysed five strategic technology areas, biomedical, clean hydrogen, circular materials economy, particle accelerators & superconducting magnets, and microelectronics & semiconductors, through case studies. These examined existing RI-TI collaborations, organizational and investment models, and service delivery practices to identify best practices and barriers.

Across all five case studies, five cross-cutting recommendations emerged and further considered in the COPILOT action plan:

1. Clarify RI and TI activity types to better define collaboration roles and constraints at different TRL levels.
2. Identify technology areas where RI-TI collaboration adds value, especially in synergy with large infrastructures.
3. Establish a common language and structure to enable clearer communication and comparison across institutions.
4. Develop flexible funding models tailored to user needs.
5. Build trust among partners through long-term collaboration on increasingly complex projects.
6. The potential for commercial services should be explored across all sectors to foster shared understanding, trust, and innovation.⁴

Building on RITIFI's D2.1, D2.2 *Report on industrial value propositions for RI-TI integrated services in selected areas*⁴ gathered insights from industry users on their needs and expectations for integrated RI-TI services. It identified best practices, challenges, access conditions, and financing models, and assessed what industry values in RI-TI collaboration to support innovation and market readiness.

Across all five case studies, four cross-cutting recommendations emerged and further considered in the COPILOT action plan:

1. Increase visibility and accessibility of RI and TI capabilities and complementary services by empowering regional networks and maintaining clear, up-to-date online information.
2. Improve service efficiency and customer focus through streamlined operations, clear access conditions, and staff trained to understand industry needs.
3. Foster RI-TI collaboration by establishing networks, harmonising access conditions (e.g. IPR, logistics), and enabling joint use through simplified cross-border funding for SMEs.
4. Ensure RI and TI capabilities stay competitive by aligning development with industry needs, enhancing investment planning, and improving access to public CAPEX funding for large-scale upgrades.⁴

SmartPilots was an Interreg Europe project (2016–2020) aimed at improving regional policies to better support Shared Pilot Facilities for industrial biotechnology. By fostering interregional cooperation and sharing best practices, the project helped strengthen these open-access facilities that bridge the gap between lab-scale innovation and market introduction, particularly benefiting SMEs in the bioeconomy sector. The project identified key funding gaps, such as the lack of large-scale investment instruments, overreliance on limited national funding, and insufficient regional resources. To address these, the project emphasizes diversifying funding sources and aligning support schemes of the funding elements with the needs of pilot facilities and SMEs. Through interregional learning, the project enabled benchmarking of funding and business models for pilot facilities across Europe, leading to the identification of good practices such as SME access vouchers, combining ESIF (European Structural and Investment Funds) and EU framework funding, and successful regional support schemes and innovation vouchers. Based on these insights, the action plan proposed expanding SME voucher schemes and strengthening innovation ecosystems around pilot centres to enhance long-term support, international collaboration, and the commercialisation of new technologies.⁵

In the Capacity and Synergy Assessment, previous COPILOT deliverables were also analysed and used to support the development of the COPILOT Action Plan. In D1.1 *FIRST REPORT ON THE EXISTING PDIs IN PILOTS4U DATABASE AND GAPS IDENTIFICATION* recommendations of how the next generation platform should look like while in D5.4 *Report on Self-Sustainable Business Model 1*, the creation of a self-sustainable business model for the platform is discussed. On the other hand, D4.3 *REPORT ON FINANCE ACTORS (FOCUS ON VENTURE CAPITAL) SCOUTED AND THEIR INTEREST IN COPILOT* created recommendations on how COPILOT can better support investments in the bioeconomy. However, due to the sensitive nature of these reports, their outcomes are not detailed further here.

5 2nd workshop

As part of T1.4, the second workshop titled “COPILOT Workshop to co-create COPILOT action plan for an integrated and efficient ecosystem for testing and upscaling bio-based processes” was held to present the outcomes from the first workshop, the capacity and synergy assessment and to present and collect feedback for the first version of the preliminary action plan to explore methods for integrating access from lab to pilot services. The workshop was organized by VTT with the help of SPRING and BBEPP.

The workshop was held on 9th of April 2025 2:00-4:00 pm CET and the agenda is show in ANNEX I. There were 33 participants in total: 13 from PDIs, 3 from cluster organisations, 6 from RIs and 11 from bioinnovators.

The workshop started by introducing the “Pilots4U powered by COPILOT” database, community and project by BBEPP, followed by SPRING’s presentation “Needs and means to stimulate the collaboration between RIs and PDIs – SWOT analysis” on SWOT outcomes from the 1st workshop. Next, BBEPP presented and simulated the COPILOT platform. The interactive part started when VTT first presented the summary of the outcome from the 1st workshop on the session “Practical means to enhance collaboration and enable identified strengths and opportunities in framework of COPILOT network” and the capacity and synergy assessment followed by the presentation of the first version of the action plan including the interactive part facilitated with Menti meter tool⁸. Three different actions are outlined:

- COPILOT action 1: Sharing information about the infrastructure capabilities
- COPILOT action 2: Enhancing engagement, networking and communication within the ecosystem
- COPILOT action 3: Influencing funding models to support green transition and piloting

Table 1 presents the Menti questions asked during the COPILOT action plan presentation as well as the summarized contribution given by the participants.

⁸ <https://www.mentimeter.com/>

Table 1 Questions and contributions from participants in the second workshop.

Question	Contributions
What activities could be added to action 1?	<p>Development of COPILOT platform including database with clear contact info, technology definitions, certificates, and upcoming funding calls. Organize interactive formats like webinars, open workshops, and use video pitches (e.g., 3-minute presentations from pilot plants). Promote relevant fairs, events, and continuous education programs. Appoint social media ambassadors and create local chapters to enhance outreach.</p> <p>To strengthen the information sharing, it is suggested to integrate social media channels (e.g., LinkedIn), involve regional cluster organizations and TTOs, and leverage existing networks of RIs and PDIs.</p>
What activities could be added to action 2?	<p>To enhance engagement, networking and communication within the ecosystem, it's recommended to exchange information on open subsidy calls, organize meetings to share success stories, and highlight activities (e.g., "activity of the month" prize). Initiatives like a voucher program through EU-funded projects and discounted access when infrastructures collaborate are suggested. Presence at key events (e.g., matchmaking, bioeconomy conferences) via a COPILOT booth is encouraged, along with technical workshops on transversal topics. Other ideas include expert mentoring for startups, showcasing projects through interviews, and using AI to match collaboration partners. Discounts on equipment and consumables, joint presentations at regional events, and a dedicated COPILOT slide for marketing are also advised.</p>
What activities could be added to action 3?	<p>To influence funding models to support green transition and piloting, joint discussions and workshops with CBE on investment needs are recommended. Establishing a representative board to engage with associations like EuropaBio and joining BIC as a member via a COPILOT-owned company are also proposed. Active participation in policy-shaping tools, such as EU and national "Have-Your-Say" surveys, is encouraged. Additional outreach efforts include engaging national funding agencies, regional authorities, and clusters, as well as involving business angels through fairs and economic media.</p>
Priority Order	<p>The most voted priority order for the actions was following: COPILOT action 1: Sharing information about the infrastructure capabilities, COPILOT action 3: Influencing funding models to support green transition and piloting, COPILOT action 2: Enhancing engagement, networking and communication within the ecosystem</p>

<p>Have you identified gaps for RI/TI collaboration and industry needs, where Pilots4U network could improve current situation?</p>	<p>To full fill the identified gaps with the help of COPILOT network, it's recommended to share non-patented case studies as inspiration, engage international partners beyond the EU, and provide mentoring on scaling knowledge and processes. Promoting training sessions, sharing best practices, and offering both financial and technical support to innovators aiming to scale up their processes.</p>
<p>Do you have any other recommendations for collaboration between RI/TI/Industry in the framework of COPILOT/Pilots4U?</p>	<p>Other recommendations were to record offline events to improve accessibility and reduce the need for time-consuming travel. Additionally, there is a need for more focus on economic analysis and modelling to support decision-making and technology scale-up.</p>

6 COPILOT Action Plan

The final COPILOT action plan to prepare an integrated and efficient ecosystem for testing and upscaling bio-based processes was made based on the 2nd workshop outcomes.

Action 1. Sharing information about the infrastructure capabilities	
<p>Background</p>	<p>The findings from COPILOT survey on open access Pilot and Demo Infrastructures (PDIs) for the bioeconomy across Europe provided a comprehensive overview of the current state of PDIs in Europe and confirmed the diversity and advanced capabilities within the European bioeconomy, with PDIs offering a wide range of services such as process development, scale-up, and custom manufacturing. This extensive network enables BIs to move efficiently from early-stage concepts to industrial-scale production. Despite this strong foundation, there remains untapped potential within European PDIs. They are well-equipped with ample capacity and availability to meet the scale-up demands of BIs. Significant investments have been made to expand infrastructure and maintain cutting-edge facilities. However, to fully realize this potential, BIs need support to make use of this high-performing network across Europe.</p> <p>To address this need, enhancing engagement between BIs and PDIs is crucial. By increasing awareness of the available resources, the European bioeconomy ecosystem can become more cohesive. Supporting BIs in accessing these facilities will help bring sustainable and innovative solutions to market more effectively. Moreover, expansion efforts and improvements to the Pilots4U platform will contribute to creating a more interconnected and responsive network.</p>

	<p>The Commission Expert Group on Technology Infrastructures (EGTI)⁹ recommended to improve access to Technology Infrastructures and highlighted the importance to improve the visibility of PDIs and the services they can offer across the EU and to increase the opportunities and support for companies to access the infrastructures, including those located in other regions or countries.</p>
Stakeholders involved	<ul style="list-style-type: none"> • PDIs • RIs • Innovators (i.e., start-ups, SMEs, large companies) • Enablers (e.g., investors, public funding organizations)
Activities	<ul style="list-style-type: none"> • Develop an integrated, user-centric Pilots4U powered by COPILOT platform (hereinafter referred to as “COPILOT Platform”) to connect PDIs, RIs, innovators and enablers <ul style="list-style-type: none"> • Geographical visibility of infrastructures • Clear technological categorization for easy navigation • Sustainable business model that enables independent operation • Disseminate success stories of pilot projects e.g., videos, webinars, project news
Expected results and impact	<ul style="list-style-type: none"> • Clear and consistent overview of available competence, equipment, facilities, certificates, scale, supporting services (e.g., modelling, LCA, TEA) • Links to relevant RIs available in COPILOTs platform • Facilitate the development of new technologies, methods, and processes by expanding accessibility to PDIs • Increase opportunities for innovators to access infrastructures
KPIs / how will be the expected impact monitored	<ul style="list-style-type: none"> • Over 140 PDIs in data base by the end of 2025 • RI page published at COPILOT platform including 10 at least 10 European distributed RIs • Active utilisation of COPILOT platform (250 registered users at the end of the project)

⁹ European Commission: Directorate-General for Research and Innovation, Towards a European policy for technology infrastructures – Building bridges to competitiveness, Publications Office of the European Union, 2025, <https://data.europa.eu/doi/10.2777/0876395>

Action 2. Enhancing engagement, networking and communication within the ecosystem	
Background	<p>The co-creation workshops conducted as part of Task 3.2 of the COPILOT, have provided valuable insights into the challenges, expectations, and needs of PDIs and bioinnovators. Need for enhanced networking and collaboration tools was highlighted. Both PDIs and bioinnovators emphasized the importance of an intuitive matchmaking system to facilitate partnerships and knowledge exchange, streamlining access to resources and expertise. Participants highlighted the necessity of a centralized space for project tendering, and collaborative R&D opportunities. This aligns with the broader goal of creating an integrated and self-sustaining bioeconomy ecosystem. Another major outcome of the workshops was the demand for training and advisory services. The inclusion of webinars, mentorship programs, and funding guidance was seen as crucial in supporting both PDIs and bioinnovators in navigating technical and business challenges. This reflects a growing need for continuous learning and strategic planning within the sector. Participants expressed strong interest in incorporating user testimonials, ratings, and case studies to validate the platform’s effectiveness and showcase successful collaborations.</p> <p>Within the COPILOT workshop to co-create COPILOT action plan for an integrated and efficient ecosystem for testing and upscaling bio-based processes conducted as part of task 1.4 participants highlighted needs to maintain competitive and up-to-date infrastructures, enhance service efficiency and customer focus, build trust among partners, and foster collaboration between complementary services.</p>
Stakeholders	<ul style="list-style-type: none"> • PDIs • RIs • Innovators (i.e., start-ups, SMEs, large companies) • Enablers (e.g., investors, public funding organizations)
Activities	<ul style="list-style-type: none"> • Organize networking events such as pitching sessions (i.e., Pitch Perfect) to connect innovators with cooperation partners and investors • Exchange information about investments through regular workshops, shared meetings with funders, newsletters, platform and social media • Utilize LinkedIn, newsletters, and other digital tools to efficiently share updates and opportunities e.g., for joint projects within the ecosystem
Expected results and impact	<ul style="list-style-type: none"> • Establish strong linkages with infrastructure and complementary services, networks, and stakeholders to create synergies and obtain best competence • Improve customer centricity of PDIs • Better understanding of future infrastructure development needs • Improved trust and understanding between the stakeholders through in person contacts

KPIs / how will be the expected impact monitored	<ul style="list-style-type: none"> • 12 webinars hosted by 12 different PDIs for Bioinnovators organised by June 2026. • Pitch perfect event and 100 connections between Bioinnovators, investors and PDIs.
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Action 3. Influencing funding models to support green transition and piloting	
Background	<p>COPILOT’s contributions to the EU Bioeconomy strategy and other key policies and strategies. COPILOT success will be key to continuously influence the progress of bioeconomy-related policies and strategies. The most relevant ones are the EU Bioeconomy strategy, the SRIA of the CBE JU, the Industrial strategy and the SME strategy. Furthermore, it will contribute to regional key policies and strategies with focus on regions without bioeconomy strategy and/or very low bioeconomy uptake.</p> <p>COPILOTs workshop discussions have highlighted need for dedicated and flexible funding mechanisms, including a robust investment prioritisation process, to strengthen and modernise European Technology Infrastructures, ensuring their services are accessible, competitive, user-driven, and aligned with the evolving needs of industry and society. In addition, easy-to-use cross-border funding mechanisms for SME users of RIs and TIs would be needed to enhance utilization of pilot services.</p> <p>RITIFI project user need study has made recommendations to keep RIs and TIs offering and capabilities competitive and updated vs. the needs of industry and society. Systematic dialogue between RIs, TIs and industry on development and investment planning based on research targets and SRIAs of the industry field was emphasised. Public support should be coordinated by the EU framework program partnerships or industry organisations to ensure competitive RI and TI capabilities will enable industry to avoid making similar investments themselves and enhance their commitment to use RIs and TIs. Direct support to RI and TI larger investment CAPEX funding is a true bottleneck. This is especially in case for investments of 5-30 M€, which are typically too high for the current public investment support instruments and too small for private/industrial investment funding mechanisms.</p> <p>The Commission Expert Group on Technology Infrastructures (EGTI) recommended to set up an EU level investment prioritisation mechanism for TIs that should address the needs of technologies of strategic importance for the EU’s competitiveness and align strategies for their availability and access with the current and future needs of users and existing TI operators.</p>
Stakeholders	<ul style="list-style-type: none"> • COPILOT project participants • EU, regional, national decision makers • Enablers (e.g., investors, public funding organizations)
Activities	<ul style="list-style-type: none"> • Engage in active dialogue with EU decision-makers

	<ul style="list-style-type: none"> • Foster policy engagement to align initiatives with broader European priorities and funding opportunities • Actively explore and connect with new EU funding programs and alternative sources to ensure sustained financial support • Evaluate relevant public private partnerships, e.g. CBE JU, role in supporting development of COPILOT platform and after the project has ended.
<p>Expected results and impact</p>	<ul style="list-style-type: none"> • Establish strong linkages with infrastructure and complementary services, networks, and stakeholders to create synergies and obtain best competence • Improve customer centricity of PDIs • Better understanding of future infrastructure development needs • Improved trust and understanding between the stakeholders through in person contacts
<p>KPIs / how will be the expected impact monitored</p>	<ul style="list-style-type: none"> • Participation to at least 2 high level policy events on Technology Infrastructures including presentation of COPILOTs policy recommendations or participation to panel discussion. • At least 5 COPILOT presentation or participation to panel discussions with regional / national stakeholders including regional/national funding bodies / authorities.

7 Conclusions

The COPILOT Action Plan outlines strategic actions to drive PDI’s accessibility, collaboration, policy alignment, and infrastructure development. The proposed actions are based on deliverable reports made in the COPILOT project as well as on selected reports of relevant former projects and assignments. The work was complemented by interactive workshop sessions among stakeholders.

The action plan focuses on fostering updated and user-friendly platform and PDI database, partnerships among stakeholders, enhancing visibility through high-profile events, actions to improve funding for development investments and users of PDI:s, and creating synergies with complementary networks. The Action Plan does not recommend establishing formal collaboration arrangements, such as a legal entity for a one-stop-shop, but instead form a more informal and flexible ecosystem for collaboration. The plan also emphasizes building a customer-centric approach and ensuring stakeholder engagement through targeted presentations and discussions.

The plan has three main actions:

Action 1: Sharing Information About the Infrastructure Capabilities

This action focuses on enhancing the connection between European Pilot and Demo Infrastructures (PDIs), Research Infrastructures (RIs), and bio-innovators. Activities include developing a user-friendly COPILOT platform, disseminating pilot success stories, and categorizing infrastructure for easier access.

The expected impact is better visibility and utilization of PDIs, facilitating innovation and scale-up in the bioeconomy sector.

Action 2. Enhancing engagement, networking and communication within the ecosystem

This action aims to strengthen collaboration and communication among PDIs, RIs, innovators, and enablers within the bioeconomy ecosystem. Key activities include organizing networking events, such as pitching sessions, sharing investment opportunities through workshops and newsletters, and utilizing digital tools for efficient communication. Expected outcomes include improved customer focus, enhanced trust and understanding between stakeholders, and better infrastructure development planning.

Action 3. Influencing funding models to support green transition and piloting

This action focuses on enhancing financial support for European Technology Infrastructures (RIs and TIs) to align with the evolving needs of industry and society. Key activities include engaging in dialogue with EU decision-makers, fostering policy alignment with European priorities, and exploring new funding opportunities. The initiative aims to improve infrastructure development, customer-centric services, and stakeholder trust through synergies and collaboration.

ANNEX I: 2nd workshop agenda

Agenda



- 14:00-14:05: **Welcome and aims of the workshop**, Mika Härkönen, VTT
- 14:05 – 14:15: **Introduction to the “Pilots4U powered by COPILOT” database, community and project**, Stef Denayer, Stakeholder Relations Manager of Pilots4U
- 14:15 – 14:30: **Needs and means to stimulate the collaboration between RIs and PDIs – SWOT analysis**, Giulia Longhi, SPRING Cluster
- 14:30-15:00: **Pilots4U powered by COPILOT” platform tools to enhance collaboration**, Yang Zou, Bio Base Europe Pilot Plant
 - Feedback, discussion
- 15:00-15:45: **COPILOT action plan for an integrated and efficient ecosystem for testing and upscaling of bio-based processes**, Emmi Nuutinen and Pauliina Tukiainen, VTT
 - Feedback on action plan, discussion
- 15:45-16:00: **Summary and closing**, Mika Härkönen, VTT



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