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Deliverable 3.3:

FULLY DEPLOY PILOTS4U PLATFORM POWERED BY COPILOT

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1.0	BBEPP	11/11/2025	First draft
1.1	BBEPP	28/11/2025	Integration of suggestions from reviewers

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Abbreviations and Acronyms

Abbreviation / Acronym	Description
BI	Bioinnovator
PDI	Pilot and Demo Infrastructure
WCAG	Web Content Accessibility Guidelines
OC	Open Call
GDPR	General Data Protection Regulation

1 Introduction

This deliverable is an updated and extended version of deliverable D3.1 Beta version Pilots4U platform powered by COPILOT. It documents the transition from the beta version to the fully deployed Pilots4U platform, which captures the final design, functionalities and refinements that have been implemented based on testing and co-creation feedback.

As in D3.1, this deliverable is a core technical output of the COPILOT project and describes the design, architecture and functionality of the Pilots4U platform powered by COPILOT. The platform acts as a central, user-friendly and accessible hub for information on open access Pilot and Demonstration Infrastructures (PDIs) across Europe. This platform supports collaboration, resource sharing and community-building among stakeholders in the bioeconomy.

In this report, the focus is on the fully operational platform: its final structure, navigation, database schema and supporting components, as well as the adjustments made since the beta version. By linking these technical elements to the wider COPILOT objectives and to the beta stage description in D3.1, this deliverable provides stakeholders with a clear view of the platform's current, fully deployed functionalities.

2 Overview of the Pilots4U powered by COPILOT platform

2.1 Purpose and Objectives

The purpose and objectives of the new Pilots4U powered by COPILOT platform remain the same as its beta version. The Pilots4U powered by COPILOT platform (the platform) is now fully deployed, following iterative development and refinement based on feedback from COPILOT co-creation sessions. Building on the existing Pilots4U database, the platform introduces enhanced interactive features that improve usability and functionality. It connects Bioinnovators (BIs) and PDIs, and supports scale-up efforts in the bio-based industry. The deployed platform is designed to:

Facilitate advanced user interaction and analytics:

- Registration and identification of users.
- Provide insights into actual usage patterns and user experiences.
- Incorporate comprehensive website analytics to better understand user behaviour, attract engagement, and assess capacity for upscaling technologies.

Support community development and feedback:

- Encourage an active co-creation dynamic within the Pilots4U community by integrating tools for user feedback and iterative improvements.
- Promote continuous interaction between BIs and PDIs

Expand information accessibility:

- Offer comprehensive details on PDIs across the EU.
- Present enriched thematic and geographic search options.

Introduce new services and features:

- Provide both internal (e.g., webinars, scale-up training sessions, events) and external (e.g., market-relevant services) resources for startups and SMEs during or post-scale-up phases.

- Include advanced visual elements like video material, downloadable leaflets, and detailed equipment catalogues.

Ensure flexibility and future adaptation:

- Develop a software environment that supports future-proof features such as traceability of connections, integration of paid services, and comprehensive reporting tools.

Promote inclusivity and market alignment:

- Ensure a high degree of completeness in the database by incorporating all relevant PDIs in the EU, guided by the COPILOT consortium.
- Address challenges related to underrepresentation, capacity gaps, and geographical disparities in the ecosystem.

The beta version represented the foundation of the platform. Based on feedback from co-creation activities, the platform has evolved with new functionalities and refinements into its fully deployed form. The platform is now accessible at its final URL: https://biopilots4u.eu/ (with https://staging.copilot-project.eu/ used during the beta and testing phase).

2.2 Design and Structure

2.2.1 Overall Architecture and Design Choices

As in the beta version, the fully deployed COPILOT platform is developed with modular design, scalability and accessibility as its core principles, and these core elements remain unchanged in the deployed version.

Platform architecture:

- WordPress-based system: the platform is built on WordPress, a system that offers powerful content management capabilities, an extensive plugin ecosystem, and the flexibility required for future enhancements. This choice ensures ease of use, streamlined updates, and adaptability to evolving project requirements.
- Modular design: the architecture follows a modular approach. This design enables individual components or features (e.g., the database, user dashboard, events) to be developed, updated, and scaled independently without disrupting the overall system.
- Scalability: the platform is designed to support future growth, including increased user activity, database expansion, and integration of additional features such as paid services or advanced analytics

Accessibility and inclusivity:

- WCAG compliance: All designs adhere to the Web Content Accessibility Guidelines (WCAG). This approach makes the platform accessible to a wide range of users, including those with disabilities. This includes features such as: text alternatives for visual content (e.g., images and videos); clear navigation with logical tab order and keyboard accessibility; sufficient contrast ratios for readability; and compatibility with screen readers and assistive technologies.

User-centric design:

- Responsive design: The platform is fully responsive. It delivers an optimized experience on a variety of devices, including desktops, tablets, and smartphones.

- Intuitive user interface: The design prioritizes simplicity and ease of use, with clear navigation, structured content, and interactive elements that enhance the user experience

Security and maintenance:

- The WordPress platform is configured with robust security measures, including regular updates, secure login systems, and data protection protocols.
- Future maintenance and updates can be easily managed. This approach helps keep the platform current and reliable.

By combining a scalable WordPress framework with WCAG-compliant, user-focused designs, the platform is both future-proof and aligned with the needs of the COPILOT project.

2.3 Description of the Database Schema and Platform Components

As in the beta version, the Pilots4U database now is structured to manage users, PDIs, events, media files and analytics. This ensures consistent handling of all core data types in the deployed platform.

2.3.1 Users

The fully deployed platform includes a user management system that stores profiles and assigns specific roles based on the user's needs. Each user has a unique ID (user ID - primary key) and is associated with personal and professional details such as name, job title, company, and email.

The platform categorizes users into three roles:

- Facility searchers who browse the database to find relevant PDIs.
- PDI owners who manage and update facility profiles on the platform.
- Premium PDI owners who have access to additional features, such as advanced analytics and promotional tools.

Each user has a securely stored password to ensure safe access to the platform. The user management system enables role-based access control. This system ensures that different user types interact with the database according to their permissions.

2.3.2 PDIs

The database stores detailed information about PDIs. These PDIs are open-access facilities that support scale-up activities. Each PDI has a unique identifier (PDI ID – primary key) and includes key details such as the facility name, description, and location.

The platform provides additional fields to enhance the visibility and accessibility of each facility:

- Social media links to improve outreach and engagement.
- Certifications that highlight compliance with industry standards.
- Infrastructure details, including available equipment, capacity, technology areas, and services.
- Multimedia content, such as videos, brochures, and images, to provide a comprehensive overview.
- Contact information for inquiries, including the name, email, and phone number of the responsible representative.

Each PDI is linked to its owner, who has the ability to manage and update the facility's profile. The structured data format allows users to search and filter PDIs based on thematic and geographic criteria, which makes it easier to find relevant facilities for scale-up projects.

2.3.3 Events

The fully deployed platform includes an event management system that provides information about webinars, workshops, training sessions, and other bioeconomy-related events. Each event has a unique identifier (event ID – primary key) and contains key details such as the title, description, and location, which may be either physical or virtual.

The system also includes:

- Event schedules, specifying dates and times.
- Registration links, allowing users to sign up for participation.
- Organizer information, which connects the event to a specific user responsible for hosting or managing it.

Events are displayed in a structured format. This makes it easy for users to browse upcoming and past sessions. Each event page provides a summary, details about speakers or key participants, and direct access to registration or additional resources.

2.3.4 Media

The fully deployed platform includes a media management system that allows users to upload and store various types of content. Each media file is linked to a specific entity, such as a PDI ID or an event ID, to enhance the platform's visual and informational quality.

Supported media types include:

- Images, used for facility profiles, event pages, and promotional content.
- Videos, providing an overview of facilities, equipment, and recorded events. In the fully deployed version, PDIs can only add video content by embedding links from external platforms such as YouTube and Vimeo.
- PDFs and other documents, such as brochures, technical specifications, and informational leaflets.

Each file is stored with metadata that includes its type, associated content, and location within the platform. The media system helps users access and download relevant materials while ensuring efficient content organization.

2.3.5 Analytics

In the fully deployed platform, user activity data are collected and analysed to improve performance, inform future developments and enhance the overall user experience. The analytics system monitors key usage indicators, including:

- Page views, showing which sections of the website attract the most attention.
- Search queries, helping to understand what users are looking for within the database.
- Navigation patterns, identifying how users interact with different features.
- Popular PDIs and events, highlighting the most viewed and engaged content.

These data provide valuable insights for optimising the platform's structure and content, supporting decisions on new functionalities and feeding into the development of the COPILOT business model (e.g. premium membership, featured content, targeted campaigns, etc.). Where relevant, some aggregated analytics will be also made available to PDI owners. These analytics will enable PDI owners to better understand how their facility profiles are used (e.g. views, clicks, downloads, contact forms) and to adapt their content or outreach accordingly.

As additional features are rolled out, the analytics setup will be further refined and complemented with qualitative feedback from PDI owners and users. This combination of insights will create a continuous improvement loop for the platform.

2.4 Navigation Structure of the Platform

The deployed platform is structured with a more clear and intuitive navigation system that allows users to easily access relevant information and features. The main sections include:

Home: The main landing page introducing the platform, COPILOT project and its mission (**Figure 1**).

About: Contains background information on the platform and project, including its goals, partner organizations, and overall mission (**Figure 2**).

Database:

- Displays a searchable list of PDIs with the updated filter display (**Figure 3**).
- Each PDI has a dedicated page with detailed information, contact details, and multimedia content (**Figure 4**).

Events:

- Lists upcoming events such as webinars, training sessions, and networking opportunities.
- Event pages include schedules, descriptions, speaker details, and registration links.

Programs:

- Added a list of past events on the deployed platform
- Webinars include recordings.

Add a Facility: A streamlined form allowing users to quickly add or update a facility (PDI) in the database.

Dashboard (for registered users, **Figure 5**):

- User login: to access personalized features.
- Manage PDI: allows users to update, register, or track the status of their facilities in the database.
- Activity Insights: Users can view analytics and reports related to their facilities' engagement on the platform.
- Profile Settings: Manage personal or organization details and preferences.

Contact: Provides a contact form and support details for inquiries or technical assistance.

Each section is designed to support users in finding relevant information, submitting data, and interacting with the platform efficiently. Examples of updated user workflows on the deployed platform are shown in **Figure 6** and **7**.

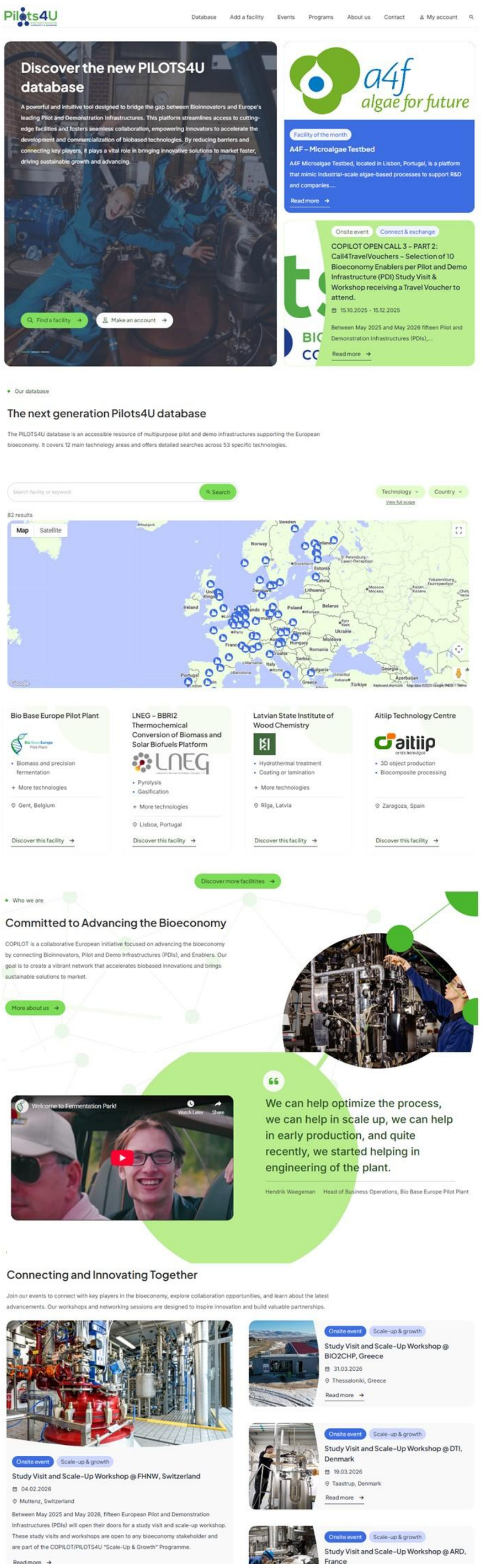

Figure 1 Screenshot: the homepage of the Pilots4U powered by COPILOT platform

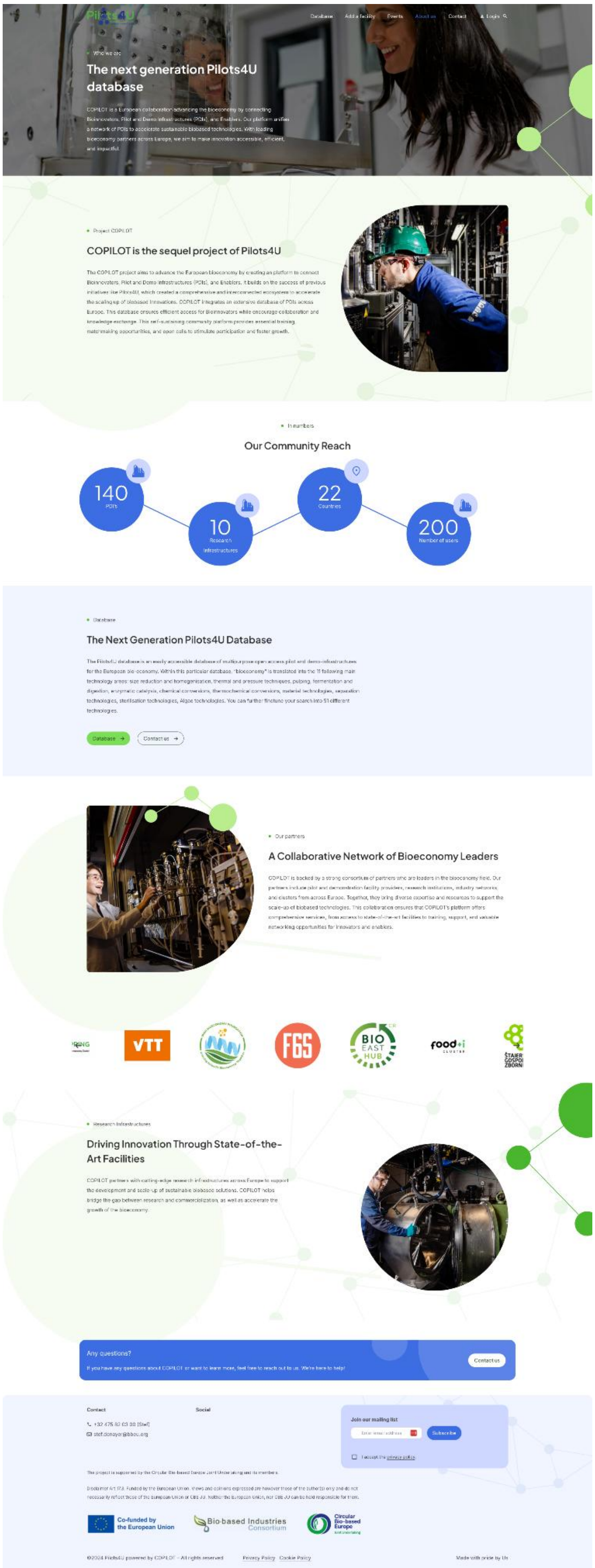

Figure 2 Screenshot: the "About Us" section of the Pilots4U powered by COPILOT platform

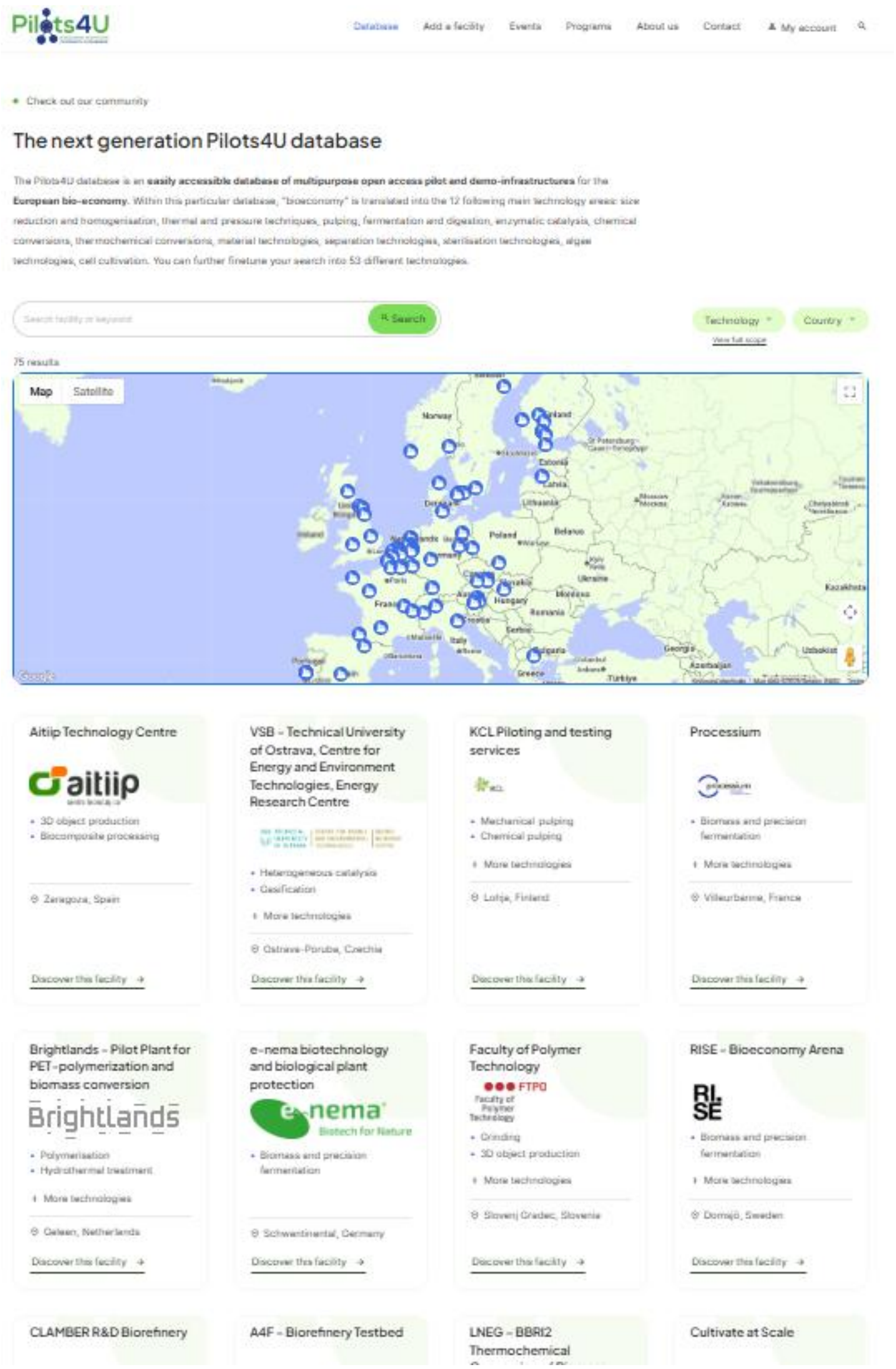

Figure 3 Screenshot: the Database of the Pilots4U powered by COPILOT platform, with updated searching tools display

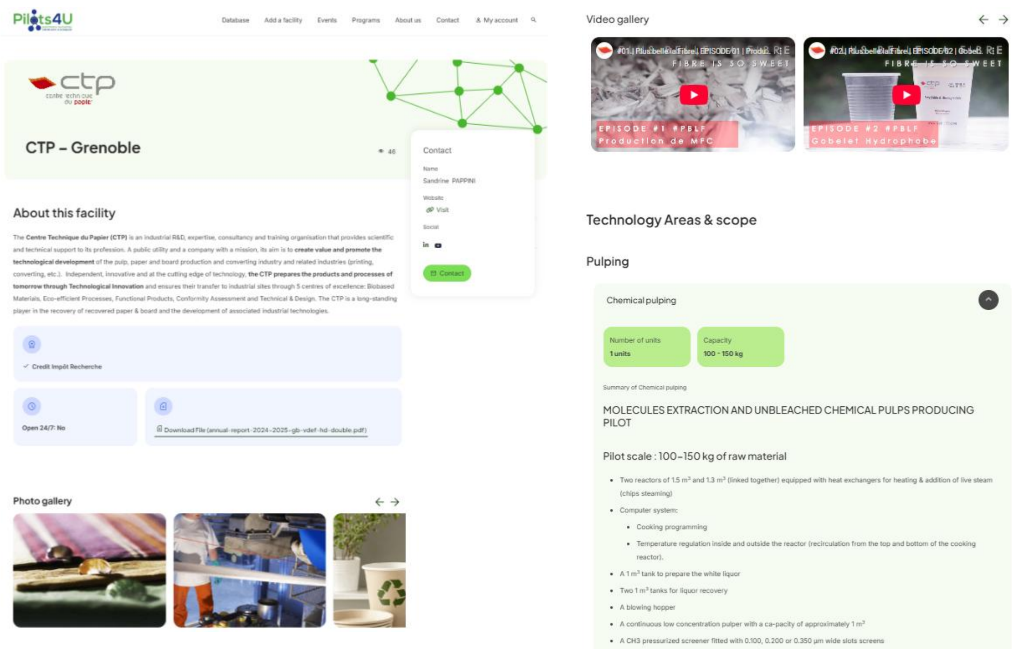

Figure 4 Screenshot: a dedicated page of a Pilot and Demo infrastructure (PDI) on the Pilots4U powered by COPILOT platform

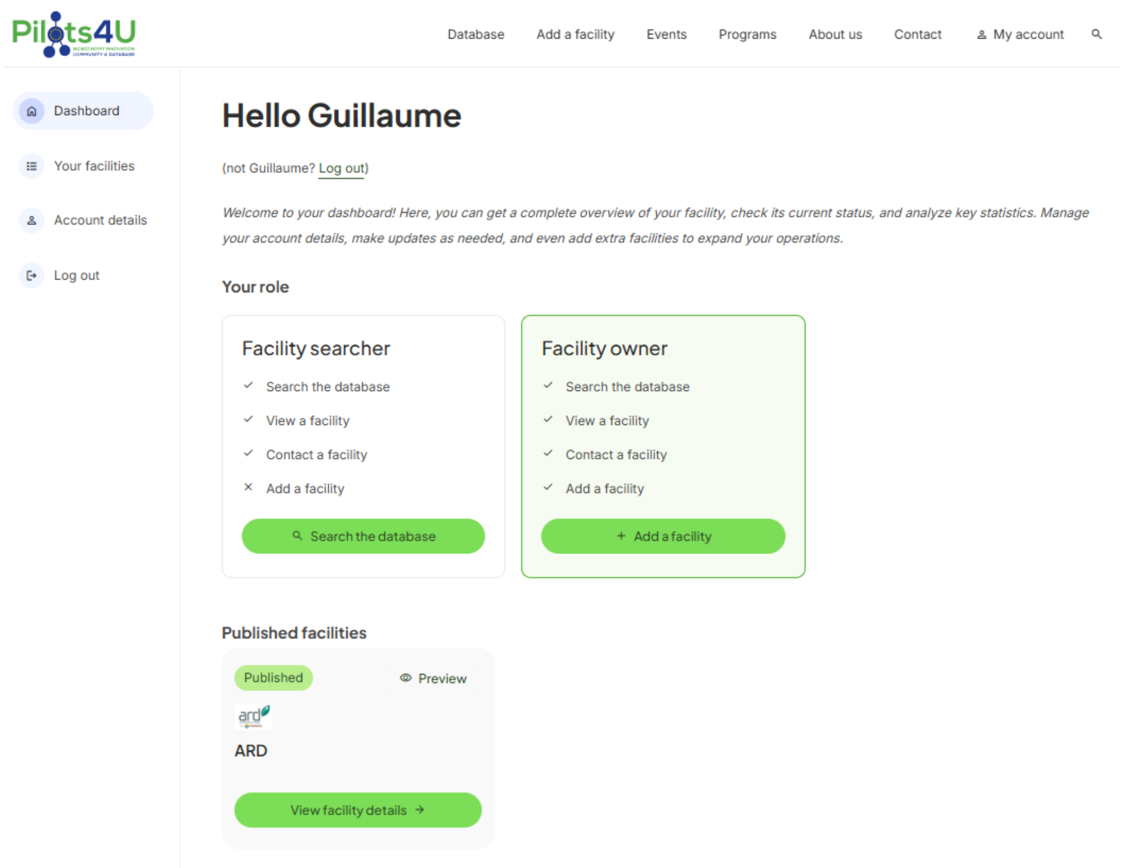

Figure 5 Screenshot: the dashboard of a registered PDI owner on the Pilots4U powered by COPILOT platform

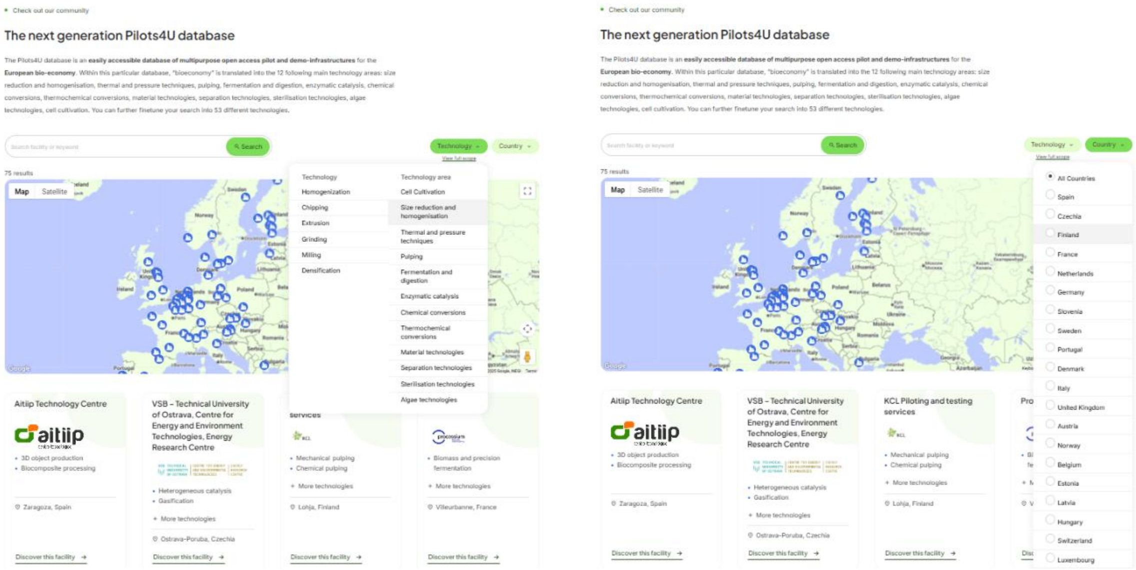

Figure 6 Example of a user searching for a Pilot and Demo Infrastructure (PDI) on the Pilots4U powered by COPILOT platform, with filtering options by technology (left) or by country (right)

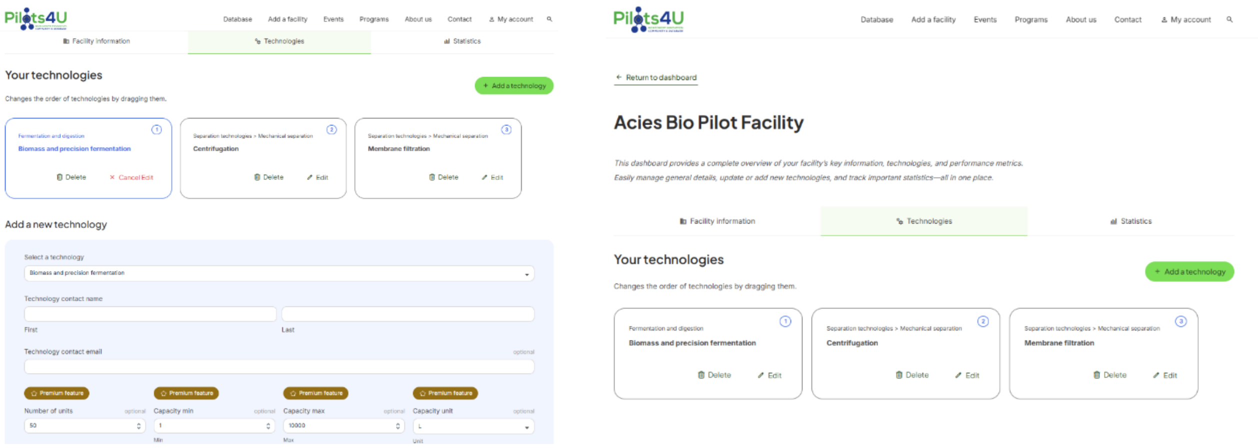

Figure 7 Example of a Pilot and Demonstration Infrastructure (PDI) owner adding content to its dedicated page (left, editing specific technology; right, choose the technology display order)

3 Design and Functionality

3.1 Database Design

As in the beta version, the schema describing the relationships between the main data entities is shown in **Figure 8**. The deployed platform uses the same structured metadata framework to ensure that all data are accurately described and well documented. This metadata structure remains essential for consistent data organisation, accessibility and effective querying.

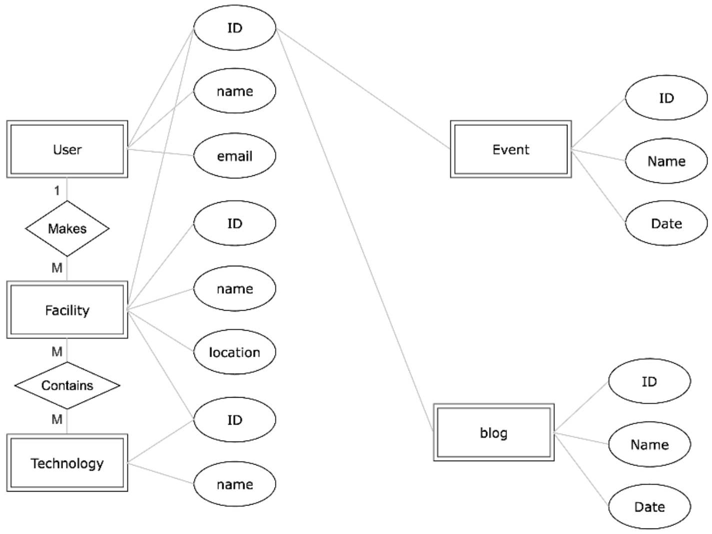

Figure 8 Relationships between data entities of the Pilots4U powered by COPILOT platform; 1 (one) and M (many) indicate the number of relationships, e.g., one user has many facilities, Many facilities can be connected to one user, and many facilities can have many technologies

Facility metadata:

Each PDI entry includes metadata fields such as facility name, geographic location, available certifications, equipment descriptions, and social media links. Additional metadata allows for categorization based on technological focus, capacity, and services offered.

User metadata:

User profiles are documented with metadata fields such as username, job title, company name, user role (Facility Searcher, PDI Owner, or Premium PDI Owner), and registration status. This ensures a personalized user experience and facilitates role-based platform functionalities.

Search metadata:

Metadata tracks search activity, such as the types of filters applied (e.g., certifications, location) and frequently searched terms. This data supports analytics and optimization for search functionality.

Data provenance:

Metadata includes timestamps for data creation, updates, and interactions. This ensures traceability and supports auditing and data integrity checks.

WCAG compliance:

Metadata for visual and descriptive elements (e.g., alt text for images and videos) ensures that the platform meets WCAG accessibility standards, enabling inclusive user interaction.

Custom fields:

The metadata structure allows for flexibility with additional fields for future needs.

This structured metadata approach ensures that the deployed platform remains scalable, user-friendly, and aligned with the objectives of the COPILOT project. It also facilitates data maintenance, reporting, and integration with third-party systems when necessary.

3.2 Data Usage

As in the beta version, the deployed Pilots4U powered by COPILOT platform uses the "WordPress All Export Pro" plugin to provide flexible and efficient data querying and extraction capabilities. This tool enables administrators to extract specific datasets based on predefined or custom criteria. Examples of how data can be queried or extracted are listed below:

Filtering data by user role:

Administrators can extract data specific to Facility Searchers, PDI Owners, or Premium PDI Owners (when business model implemented). This capability supports detailed reporting and analysis.

Exporting facility information:

Facility-related data, such as certifications, social media links, and geographic location, can be exported for further processing or sharing with stakeholders.

Custom search queries:

Data can be queried based on specific parameters, such as facilities with certain certifications, users from specific regions, or search trends.

Dynamic file formats:

The plugin allows exports in various formats, such as CSV, Excel, or XML, a feature that guarantees compatibility with external tools and reporting systems.

Data segmentation:

The plugin supports segmenting the exported data, such as retrieving only new facilities added in a specific timeframe or filtering out incomplete entries.

Automation and scheduled exports:

"WordPress All Export Pro" also allows for scheduled exports, ensuring that stakeholders regularly receive updated datasets without manual intervention.

This solution provides efficient and user-friendly data extraction. As a result, the platform's data is readily accessible for reporting, analysis, and informed decision-making. An example of data extraction is shown in **Figure 9**.

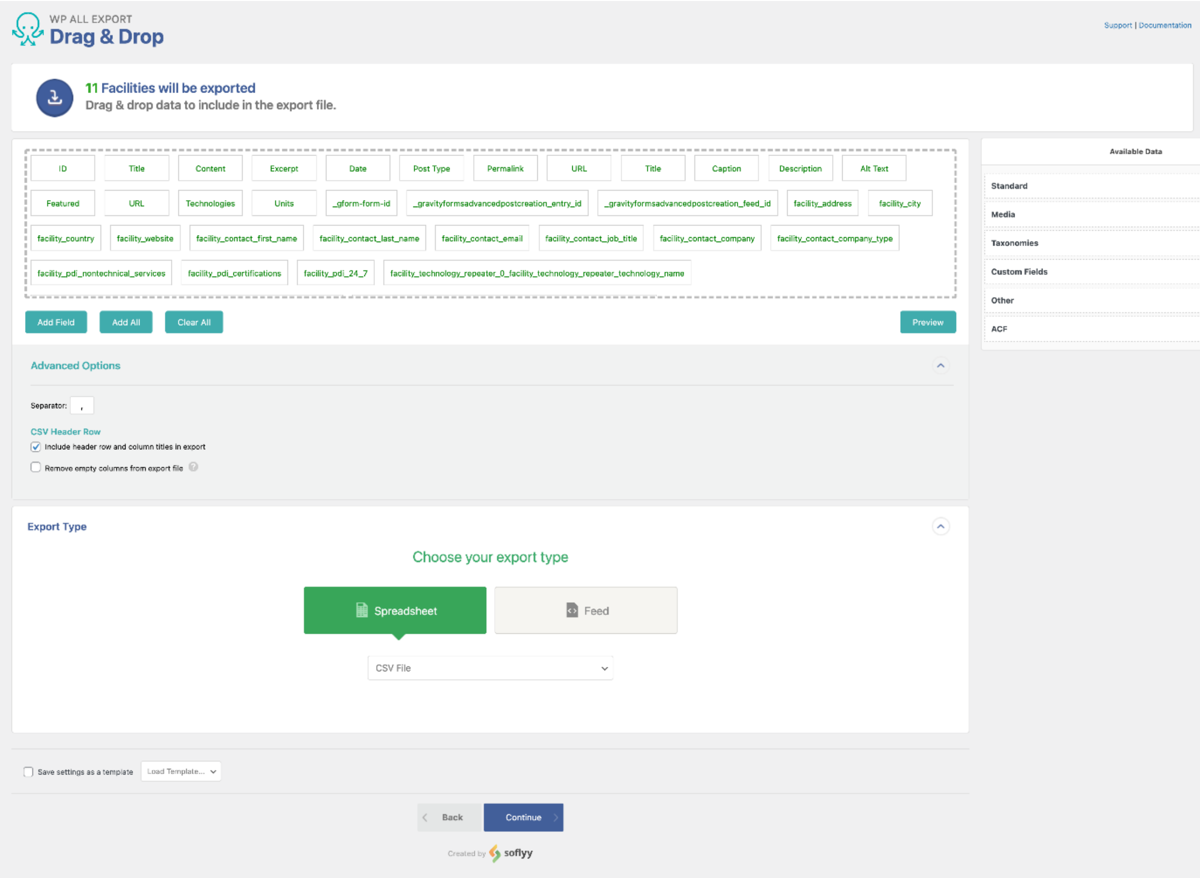

Figure 9 An example of how data could be exported from the platform: choose from different fields, then export in CSV file

4 Compliance and Ethical Considerations

The deployed platform complies with General Data Protection Regulation (GDPR) standards and follows established data protection policies to ensure user privacy and security.

Users are informed about data collection and processing through clear consent mechanisms (**Figure 10**). The platform provides:

- **Cookie Policy**: Users can review how cookies are used and manage their preferences at Cookie Policy.
- **Privacy Policy**: The platform outlines data protection measures and user rights at Privacy Policy.

For a detailed overview of data management practices, including storage, sharing, and security measures, refer to Deliverable 6.1 – Data Management Plan 1.

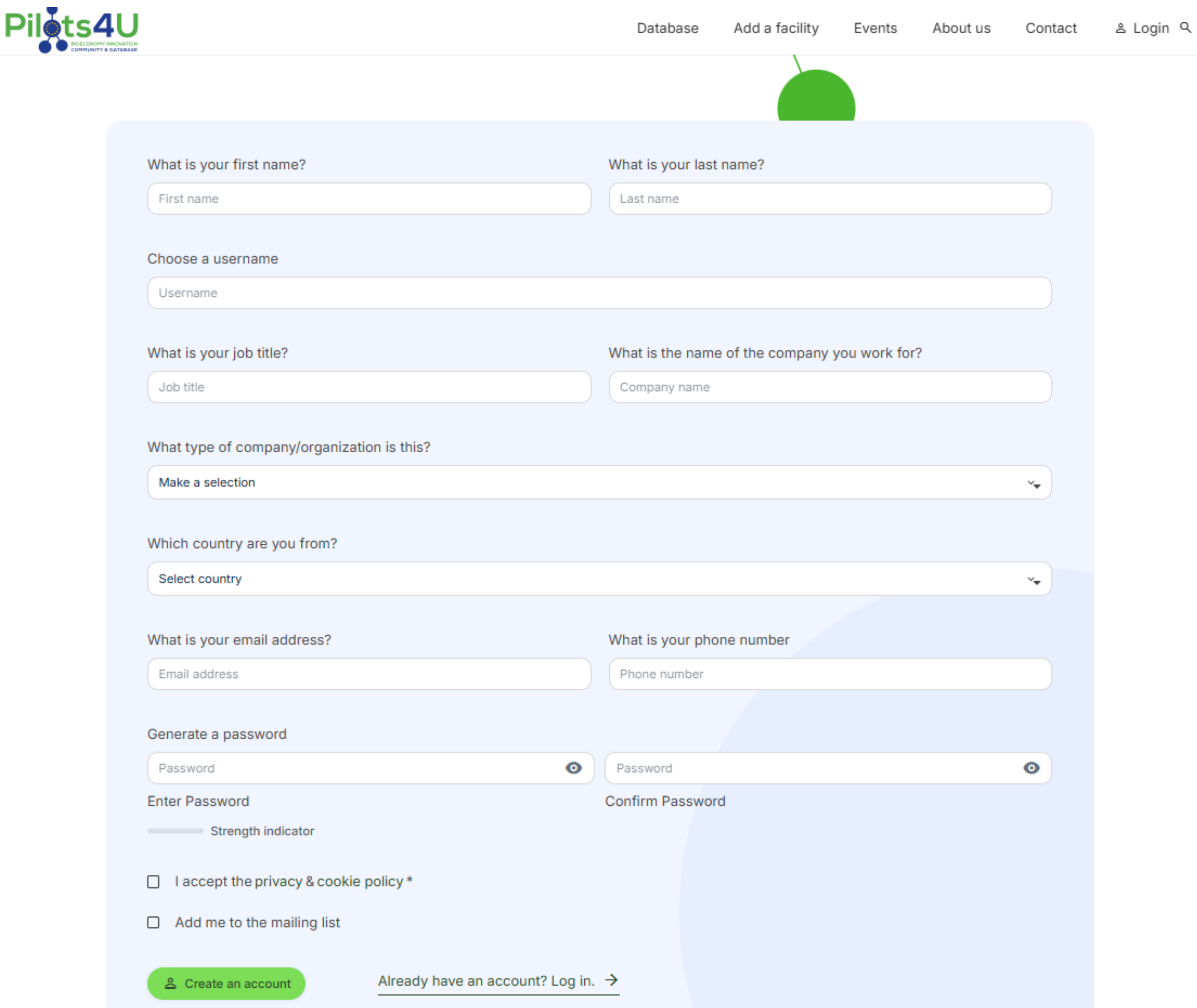

Figure 10 User need to agree with the cookie and privacy policies before completing the registration

5 Next steps

Following the official launch of the new Pilots4U powered by COPILOT platform during Pitch Perfect & Boost the European Bioeconomy 2025, the platform will enter a dedicated "free trial" phase.

During this phase, the COPILOT consortium will focus on populating the platform, inviting PDI owners to register, actively supporting PDI owners in completing and improving their facility profiles. At the same time, registered PDI owners will have full access to all available features. This will allow them to experience the platform's functionalities in practice (e.g. enhanced visibility, analytics, event promotion). This period is intended to give PDI owners a realistic impression of the added value of the platform and to help them decide whether they wish to become paid premium members at a later stage.

Insights from this free trial, including usage data and feedback from PDI owners and users, will inform the fine-tuning of both the technical setup and the service offering. The new Pilots4U business model will be implemented from June 2026 onwards. This will mark the transition from the trial phase to a sustainable service that supports the long-term operation and continuous evolution of the platform.