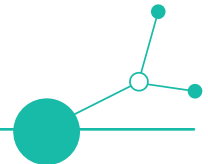


D 3.5.1 Technical Architecture for GREENE 4.0 innovation platform



Version 1
April 2025





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A. Executive summary

GREENE 4.0 addresses critical challenges faced by manufacturing companies in Central Europe due to global supply chain disruptions and the urgent need to build resilient, smart, and green value chains. By fostering transnational cooperation among industry stakeholders—including SMEs, large enterprises, public authorities, research institutions, and business support organizations across Czech Republic, Slovenia, Austria, Italy, Germany, Poland, and Hungary—GREENE 4.0 aims to strengthen innovation ecosystems and accelerate the transition to sustainable business models. Through the co-creation and piloting of two smart and green manufacturing value chains, development of the GREENE 4.0 Digital Innovation Platform, Transnational Digital Transformation Sites, and supporting tools like Open Innovation Toolkits and a Private Equity Tool, the project will enable companies to innovate more effectively and adopt smart, green technologies.

Project Overview

This deliverable is part of work package 3, activity A.3.5. This activity scope is to develop and deploy GREENE 4.0 innovation platform as a solution and marketplace co-designed based on piloting and testing of new value chains through Activity 3.4.

Within WP3, different tasks from A3.1 to A3.6 play specific roles: A3.1 helps to find and choose companies looking for Greene 4.0 solutions, A3.2 sets up a contest for innovative ideas related to Greene 4.0, A3.3 puts in place Greene 4.0 Innovation Programs to use digital and green solutions effectively, A3.4 pilots and tests new Greene 4.0 value chains, A3.5 brings together and deploys the Greene 4.0 innovation platform, and A3.6 disseminates and shares updates and results of the project.

With this document a foundation is laid for the update of the innovation platform, previously Pro.Net into the new and improved B2GreenHub. B2GreenHub is the result of multiple EU projects, in this document the specific contribution of GREENE 4.0 is presented as well as a general overview of the functionality of the platform. The platform is a collection of a wide range of content developed by the previous project activities, as will be described in the following chapters.

Scope of Document & Summary

The D 3.5.1 Technical Architecture for GREENE 4.0 innovation platform is a technical document, part of activity 3.5 titled Aggregation and deployment of GREENE 4.0 innovation platform. It describes the software architecture requirements, the needed integration parameters, the interoperability requirements and the needed interaction between new functionalities / services and old features. It provides a comprehensive overview of the progress made in this activity, detailing the upgrade of the Pro.Net platform to the B2GreenHub platform. This expansion is currently being developed through five core EU projects. This document aims to provide an overview of the platform's concept, planned features and structure.

What is B2GreenHub, and in what ways does it represent a transformative tool for accelerating the adoption of green and digital technologies within the business ecosystem? It is “groundbreaking” because it is not just a static platform — it is dynamic, interoperable, and built to scale across regions and projects, helping to digitally transform traditional business processes while embedding sustainability into the core.



It is like a bridge between innovation and implementation, with the backend doing all the heavy lifting so users can intuitively engage with complex ecosystems — whether they are startups, SMEs, large companies, or policy-level actors. On the frontend, users are greeted with a clean, intuitive interface that adapts to their role and needs, ensuring easy navigation across tools, services, and resources.

Imagine all the tools and resources developed through numerous EU projects — each working toward the same overarching goals of sustainability, innovation, and digitalization — scattered across countless disconnected platforms.

➔ B2GreenHub brings them together into one fully operational, multinational platform.

It acts as a central point of access, gathering everything the EU marketplace needs to grow and evolve in a green and digital direction.

By consolidating these assets, B2GreenHub supports the development of a more competitive and future-ready economy. As EU countries become more interconnected, it only makes sense that our digital infrastructure follows the same path.

➔ This platform makes EU-funded projects easier to implement, more efficient to manage, and capable of achieving greater long-term impact.

We would like to emphasize that the platform has two main components, the front end and the backend. The key feature of the frontend is that users will see at face value a unified, intuitive interface that enables seamless access to a variety of services and tools. The frontend is designed to ensure optimal usability. The backend of the B2GreenHub platform serves as the operational core, enabling the management of data, users, and integrations that drive the platform's functionality. It allows users to input and manage data, with access options for different user types, including companies, solution providers, and project partners.

The platform is designed to be as versatile as possible, ensuring that all relevant stakeholders are effectively included. We have focused on maximizing the value of each stakeholder's contributions. This includes B2GreenHub agents, Digital Experts, Green Experts, Business Experts, Tech Solution Providers and providers of Test Beds. Another feature of the B2GreenHub platform is that it allows the integration of Partner Networks and the promotion of Industrial Events.

Although our objectives are wide-ranging, we understand that success depends on concentrating efforts on the most crucial areas. That is why we have identified focus areas that help stakeholders transition to a better tomorrow. The focus areas are divided into two sections, green and digital. The green focus areas are carbon capture and storage technologies, green and sustainable materials, waste reduction and recycling technologies, energy efficient technologies and renewable energy technologies. On the other hand, the digital focus areas are cybersecurity and digital trust, additive manufacturing and 3D printing, data analytics and artificial intelligence, automation and robotics and digitalization and connectivity.

By integrating the contributions of diverse stakeholders such as businesses, solution providers, experts in both green and digital fields, and tech providers, B2GreenHub ensures that each stakeholder's input is fully utilized. The platform is structured to cater to a wide range of users, from small businesses to large companies and project partners, ensuring all players in the ecosystem are supported.

With a strong focus on addressing the core needs of green and digital transition, B2GreenHub helps consolidate the fragmented resources and tools across various EU projects into a single, unified platform.



This allows for better collaboration, enhanced efficiency, and a greater impact in achieving long-term sustainability and digital transformation goals.

In short, B2GreenHub serves as a central hub for driving the EU's green and digital agenda forward.

Audience

This document is intended for:

- Project Partners: To inform and guide on the use of the e-platform B2Greenhub.

B. E-platform concept

B2GreenHub is a dynamic and scalable digital platform that supports the green and digital transformation of the European business ecosystem. It is not a static website, but an active tool that connects many services, tools, and resources developed from different EU projects. The platform helps companies, startups, and policy-level actors to access and manage these resources more easily.

B2GreenHub has two main parts: **the frontend** and **the backend**. The frontend gives users a simple and clear interface that changes depending on their role, so they can find and use tools without problems. The backend is the engine of the platform. It controls data, user access, and system integration. This allows different types of users, like solution providers, project partners, and businesses, to manage their content and data.

The platform is built for flexibility and works across regions and sectors. It supports important actors in the ecosystem, like Green Experts, Digital Experts, Business Experts, and Tech Providers. It also allows for integration with partner networks and the promotion of industrial events.

The main value of B2GreenHub is that it collects disconnected EU-funded tools and platforms into **one central system**. This makes project management easier, increases efficiency, and helps projects create more long-term impact.

B2GreenHub focuses on two main areas: **green technologies** (like carbon capture, renewable energy, sustainable materials, and waste reduction) and **digital technologies** (like AI, cybersecurity, robotics, 3D printing, and connectivity). These focus areas help stakeholders move faster towards sustainability and digitalization.

By combining all tools, data, and expertise in one platform, B2GreenHub helps build a stronger, greener, and more competitive EU economy.

Figure 1 presents the main components of B2GreenHub: the backend, the platform, and the frontend marketplace. For easier presentation, the front end and the platform are presented separately even though they are both part of the front end. It is important to highlight that the platform is supported by five EU-funded projects, as shown in Figure 1. Figure one also serves as a legend, with each color assigned to its corresponding project. Each of these projects has contributed unique elements to the platform, enhancing its functionality and comprehensiveness. The specific contributions of each project will be detailed in the following figures.

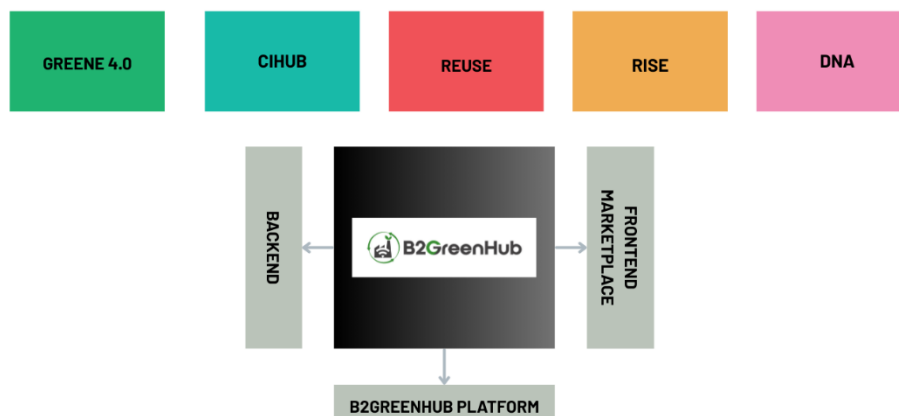


Figure 1: Main composition of B2GreenHub

We begin by presenting the backend of the platform. The purpose of this section is not to detail the operational aspects, but rather to highlight the contributions made by each project—particularly emphasizing the role of the GREENE 4.0 project. With that focus in mind, let us delve into the specifics.

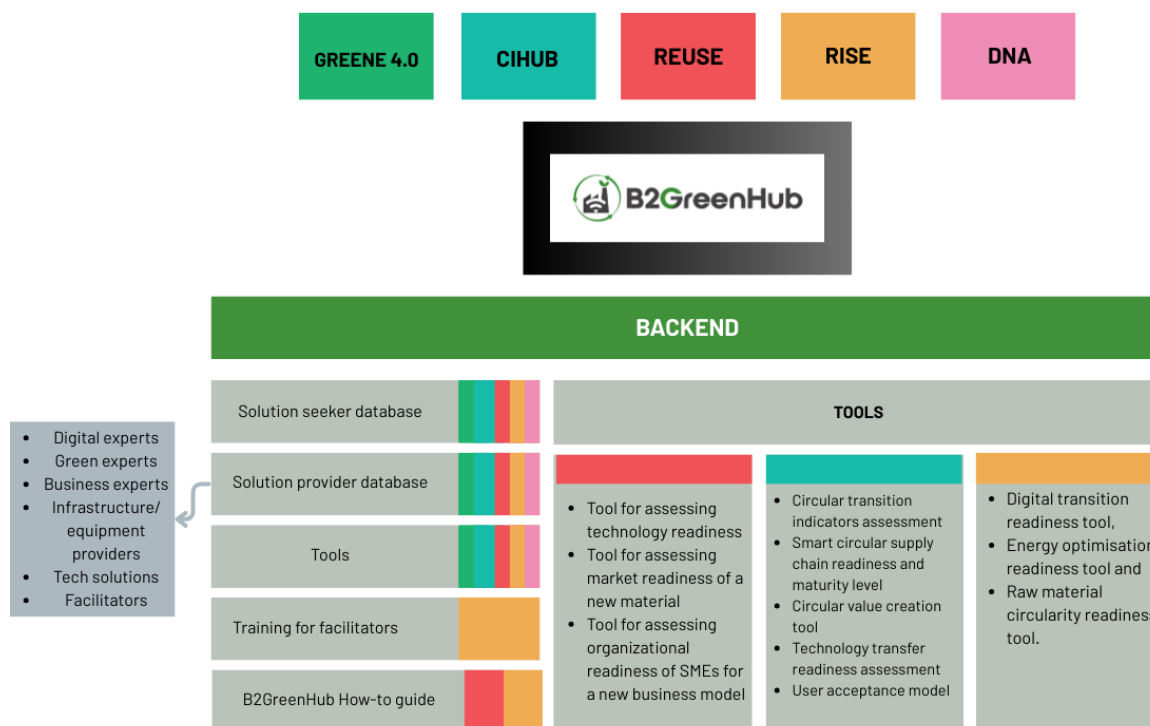


Figure 2: Greene 4.0 contribution to B2GreenHub

As shown on figure 2, the green colour represents the contribution of the Greene 4.0 project. Greene 4.0 played a significant role in developing both the solution seeker and solution provider databases as well as adding to the collection of tools that have been integrated into the backend.



Moving on to the next section of B2GreenHub, **the marketplace** shown on figure 3. The marketplace is a section dedicated to showcasing solution providers and additional providers of resources. GREENE 4.0 has enriched the assortment of showcased services by adding the catalogue of the latest available technological solutions, a catalogue of demo centres and a catalogue of competencies.

These additions will ensure that the marketplace available on B2GreenHub maximizes its potential, so that users can have access to a variety of services needed for the utilization of green and digital technologies.

The information was attained through the Open Innovation Map which is intended as a tool for locating sources of knowledge and innovation assets, their characteristics, classification and usage. It represents an inventory system of the main knowledge and innovation assets available in project regions and reveals weak links and bottlenecks in the flow of knowledge and market needs. Each partner region defined an Open Innovation Map; therefore, overall, 7 Open Innovation Maps have been developed. The information obtained through the open innovation map will be a key component of the services presented on B2GreenHub's marketplace.

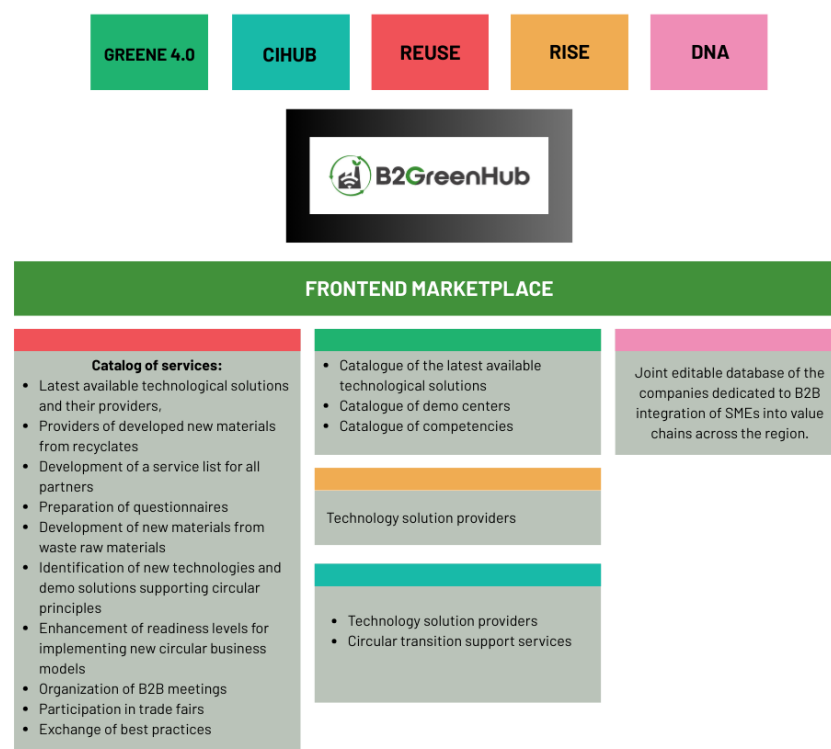


Figure 3: GREENE 4.0 contribution to the B2GreenHub Marketplace

On figure 4 we have presented the final element of B2GreenHub, the platform itself. The platform has four sections: resources, solutions, clients and the expert forum. The solutions section has been developed with the help of four projects.

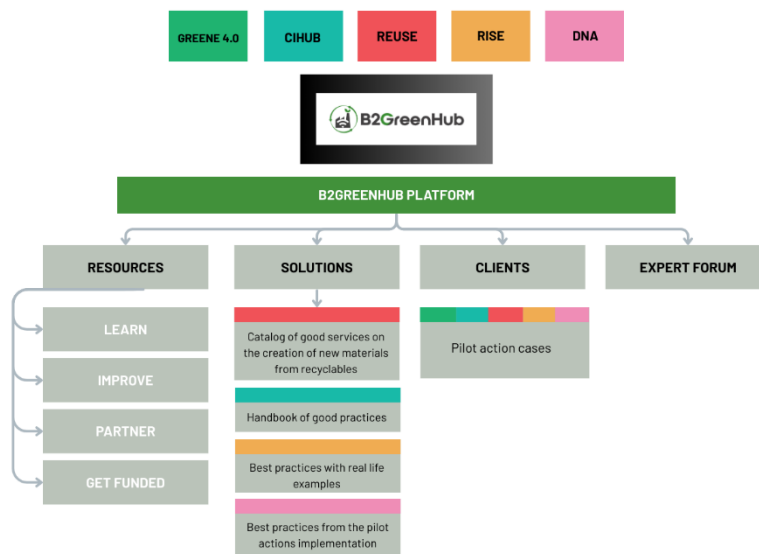


Figure 4: GREENE 4.0 contributions to the B2GreenHub platform

The client's section is a product of joint project activity by all five projects. It offers pilot action cases that showcase real-world applications, demonstrating the practical implementation of the tools and methodologies developed within the platform.

The platform also includes an expert forum.

Finally, we have the resources section, which has subsections, so we will describe it in more detail. The subsections are learn, improve, connect and get funded. On figure 5 we have outlined the contents of the learn section.

The purpose of the learn section is to serve as a digital library of various materials intended to provide more information to users about green and digital technologies. The GREENE 4.0 project results have been implemented in the academy section as well as the policy section. This division of the learn section is practical as it enables users to access the resources that are relevant to them as our platform will be used by different stakeholders with different needs. Content wise GREENE 4.0 has contributed to the learn section by providing open knowledge training box programs, smart manufacturing and open innovation toolkit mastering, digital manufacturing and open business models generation and operation, green industry innovation and sustainable production technologies and the funding gaps – reaching private capital by performing the private equity investment tool.

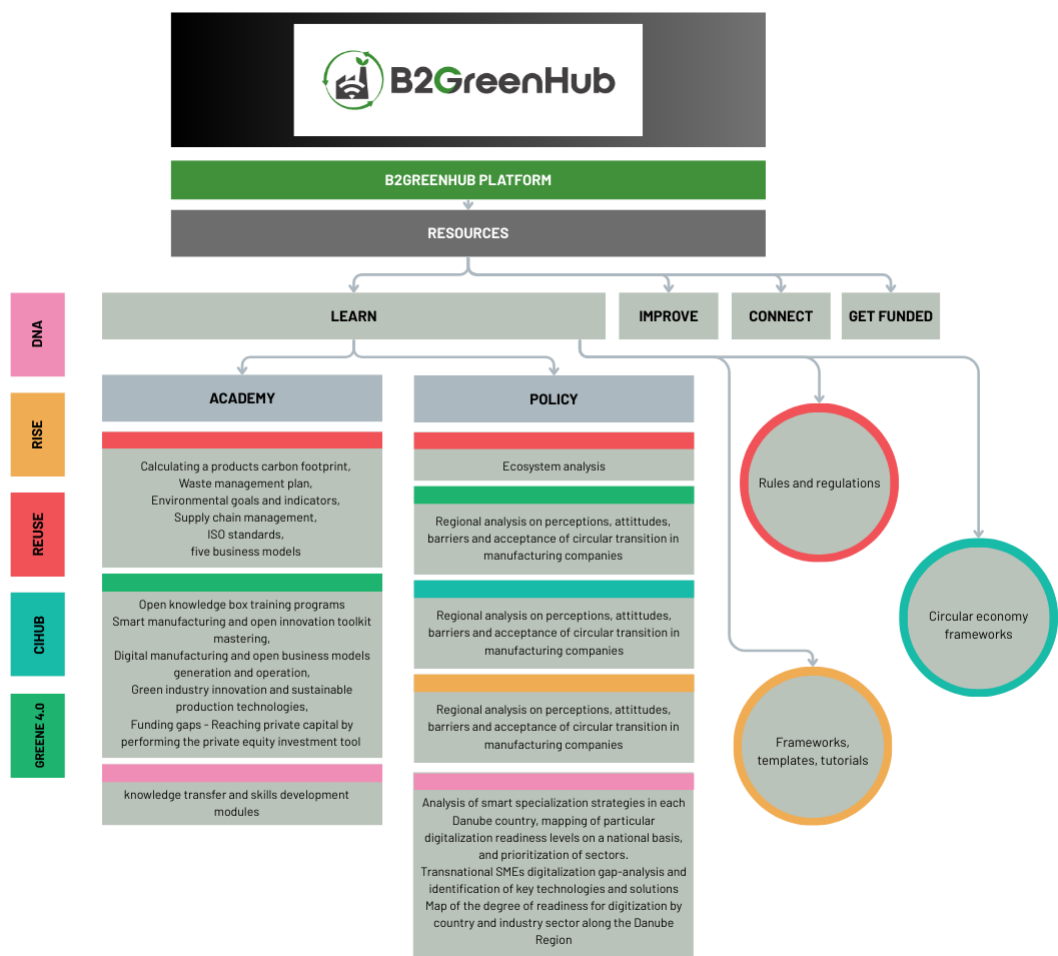


Figure 5: GREENE 4.0 contribution to the learn subsection of the resources on B2GreenHub

To the policy section GREENE 4.0 has contributed with the regional analysis on perceptions, attitudes, barriers and acceptance of circular transition in manufacturing companies. All selected tools and techniques for accelerator program support will be available on a joint e-platform, B2GreenHub, with access to all facilitators.

On figure 6 you can find the overview of the improve subsection, which is a collection of tools that SME's can utilize for the adoption of green and digital technologies. GREENE 4.0 has contributed to the platform with the private equity investment readiness tool and the business model generator.

Continuing we move on to our last two subsections, Connect and Get funded, presented on figure 7. Starting with the connect section, as visible on figure 7, GREENE 4.0 has contributed by adding to the eco-system heat map. The ecosystem heatmap serves to identify available knowledge assets & resources for circular transition support in partner innovation ecosystems as well as to identify regional facilitators that will be involved in circular transition accelerator support program.

Finally, we have the get funded subsection which presents all the funding opportunities identified through all project activities.

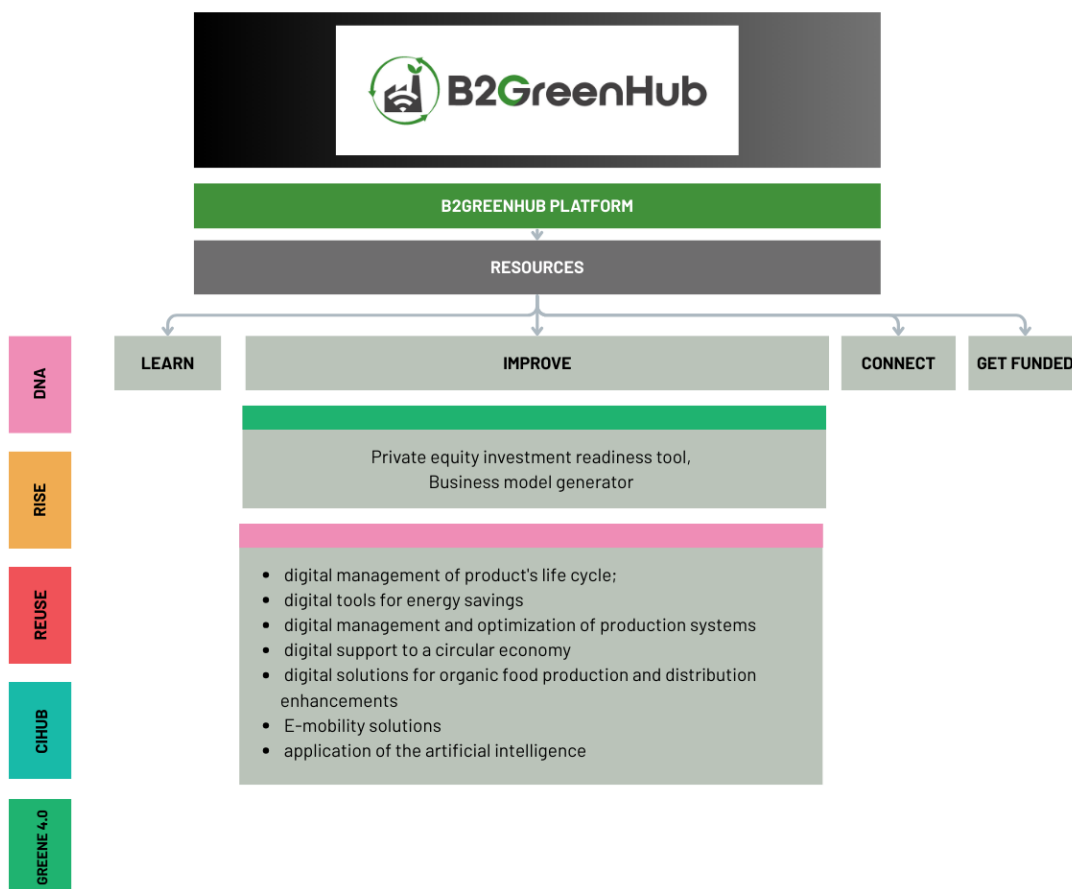
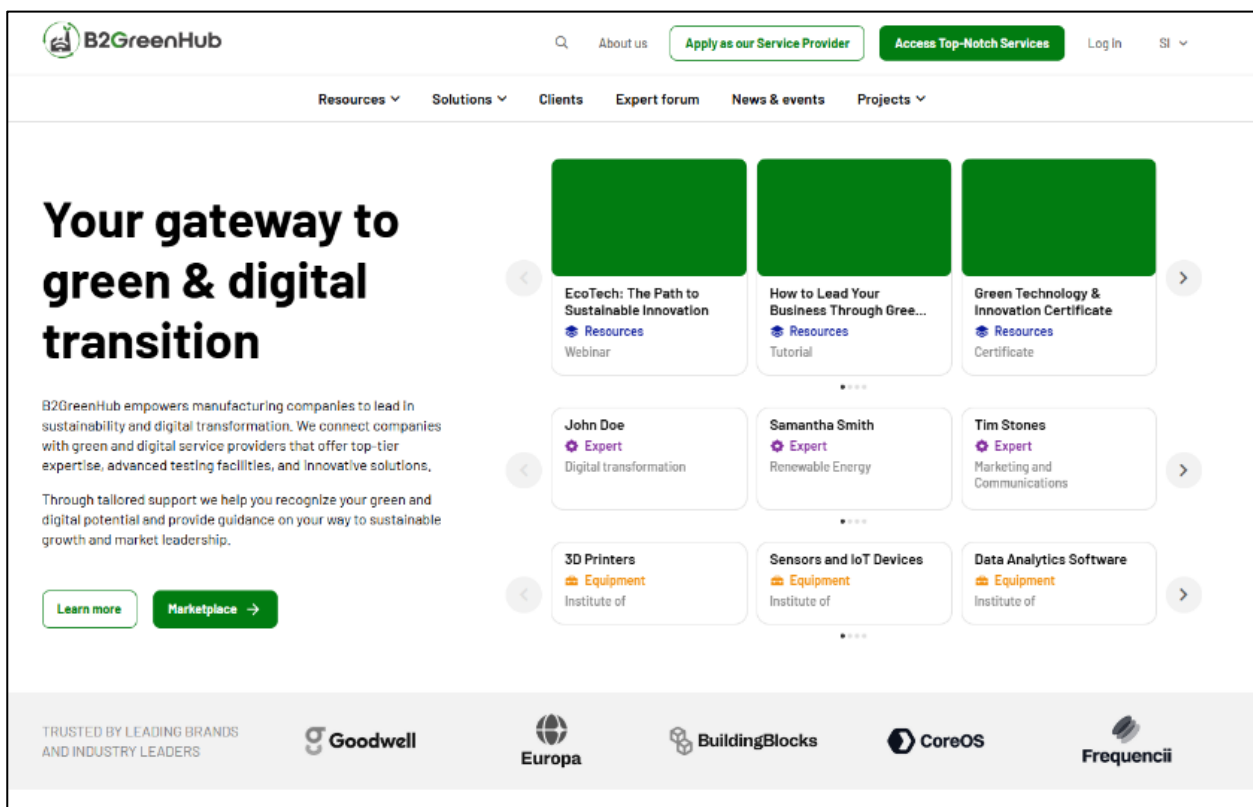


Figure 6: CI-HUB contribution to the Improve subsection of the resources on B2GreenHub



C. E-platform main sections and elements

The expansion of the platform will introduce several key features from various sources aimed at fostering collaboration between solution seekers (manufacturing companies) and providers of digital and green solutions to accelerate European manufacturing SMEs.



The upgraded platform, B2GreenHub, will include:

- A landing page to provide an overview of the platform's mission and offerings.
- A comprehensive backend for partners, who will act as facilitators connecting manufacturing companies with digital and green solution providers.
- A marketplace showcasing all available services offered by experts and solution providers.
- Learning resources, funding opportunities, and a wide range of open-access tools, developed within multiple EU-funded projects, all available in one place.
- A dedicated showcase page where manufacturing companies can explore highlighted experts and providers of expertise, solutions and infrastructure.
- A section dedicated to best practices, use cases and solutions for manufacturing companies.

This expansion aims to create a centralized hub that enhances the visibility, accessibility, and usability of digital and green transformation solutions, fostering stronger connections between industry stakeholders.



D. B2GreenHub Platform Project Contributions

This chapter provides an overview of the projects that developed the overall concept, structure, and logic of the platform's components – both pages and subpages – including its frontend and backend database. Where new structural elements or concepts were required, the corresponding project under which they were developed is indicated. Within the basic page framework, these projects also contributed introductory and general texts for subpages, as well as other connecting content (such as images, text, filters, etc.) necessary to ensure an optimal user experience.

It is important to note that although the structure of the platform is presented in different chapters, each chapter highlights different aspects. **The former chapter E-platform concept presents the contributions of each project in terms of content, this chapter focuses on the financial aspects of the development of the platform.**

This chapter does not cover the more specific content that populates the platform. For example, it does not address:

- **Frontend:** showcased providers (green experts, digital experts, business experts, technology solution providers, infrastructure/equipment providers) in the *Connect* section; showcased solutions in the *Solutions* section; success stories in the *Clients* section; contributed news and events in the *News & Events* section; and offerings presented in the *Marketplace* (including services, trainings, solutions, and testing infrastructure).
- **Backend:** the set of solution seekers, providers (green experts, digital experts, business experts, technology solution and infrastructure/equipment providers, facilitators), tools, and trainings.

The specific content contributions made by each project, which are not discussed here, are outlined in Chapter **E-platform concept**.

However, this chapter does include the placement of tools developed within various projects on the frontend, along with the associated project tags. These tools also required the development of their own concepts, structures, and logic, which were defined under the respective projects that created them.



1. Development of concept, structure, and logic of the platform's frontend (public informational site)

This (figure 9) is the site map of the B2GreenHub platform's frontend. It illustrates the structure and organization of the platform's pages, with a visual hierarchy represented through color: dark green indicates the main elements, while lighter shades represent sub-elements and subpages. Each section is tagged with the project responsible for developing its core concept, structure, and logic. This visual overview highlights how different project contributions have shaped the frontend architecture of the platform.

1.1. B2GreenHub Landing Page

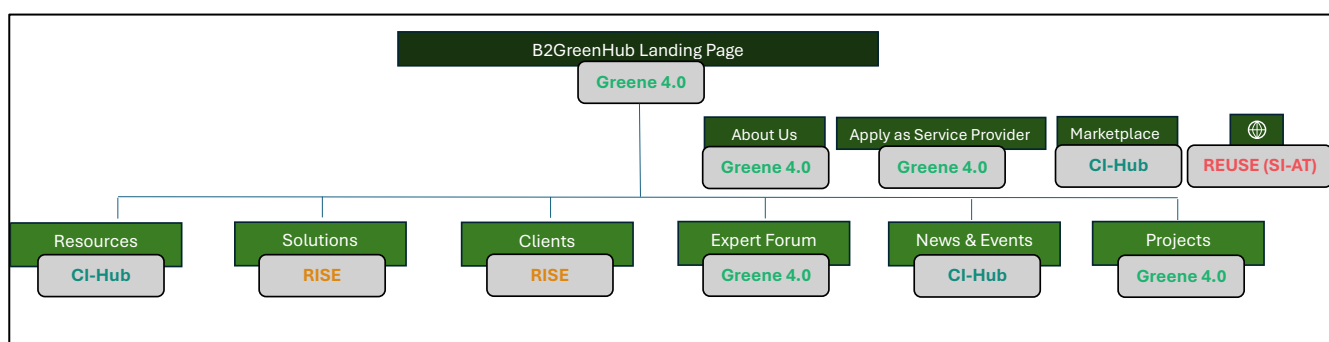


Figure 8: B2GreenHub Landing page site map

- **The structure and concept of the B2GreenHub landing page** – the platform's main entry point – were developed under the Greene 4.0 project. While some sections will feature content contributed by all five projects – for instance, a provider showcase carousel and a feed of recent news and events – the overall concept, structure, and primary general content of the landing page were designed and developed by Greene 4.0.
- **The *About Us* page** was developed by Greene 4.0, including both its structure and core content. One section features a card grid showcasing facilitators, with content contributions coming from all five projects. Another section highlights success stories from clients, also presented in a card grid format, with input provided collaboratively by all projects.
- **The *Apply as Service Provider* section** was fully developed by Greene 4.0, including its concept, structure, and content.
- **The *Marketplace* section** will be developed under the CI-Hub project, defining its overall concept, structure, and logic. The content – such as services, trainings, and other provider offerings – will be contributed collaboratively by all five projects.
- **Language selection** (🌐 icon) – the landing page and main menu elements will be translated to Slovene and German. This will be REUSE (SI-AT) contribution.
- **The remaining menu sections – *Resources*, *Solutions*, *Clients*, and others** – are described in more detail in the following pages of this chapter.



1.2. Resources Page

The concepts and structures of the pages under the Resources section, as shown in figure 9, were developed by Danube DNA, Greene 4.0, and CI-Hub. However, all five projects contribute specific content to this section, including tools and provider information.

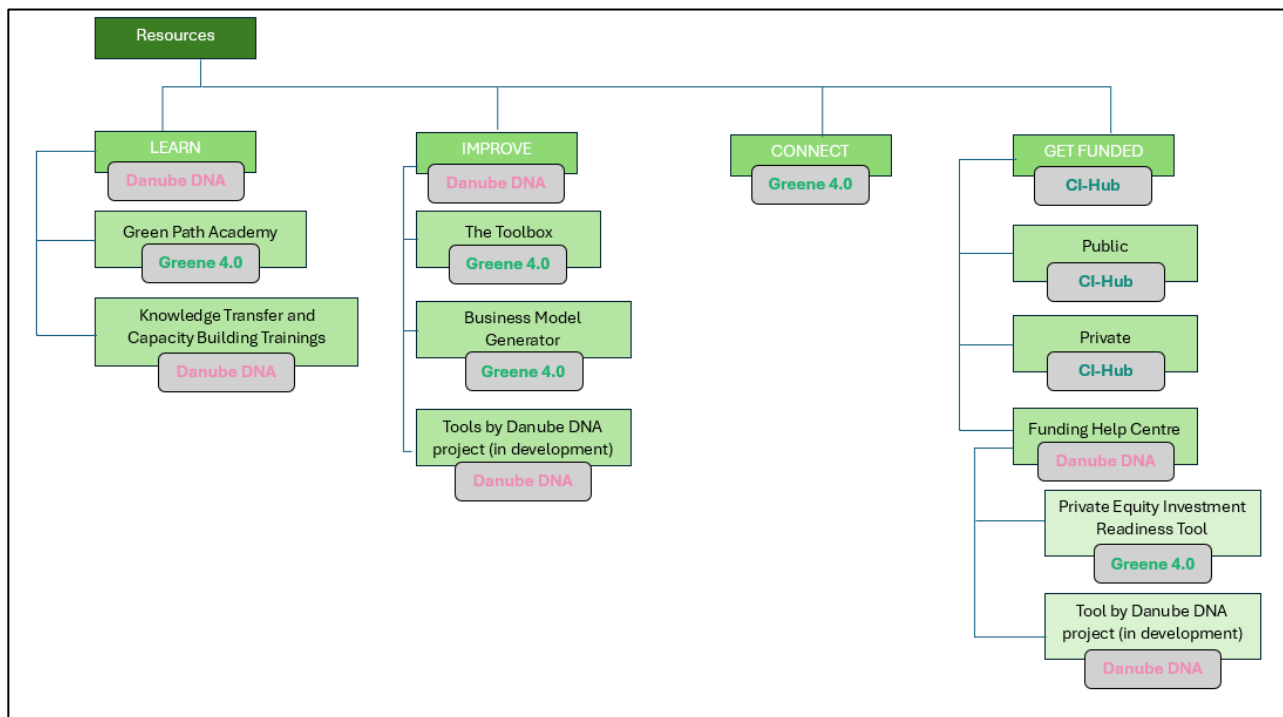


Figure 9: B2GreenHub Resources sitemap

1.3. Solutions Page



The structure and concept of the *Solutions* page were developed under the RISE project. The content – specifically, solutions linked to manufacturing processes – will be provided collaboratively by all five projects.

1.4. Clients Page



The structure and concept of the *Clients* page are being developed under the RISE project. The content – featuring success stories and best practices from partners collaborating with manufacturing companies in pilot actions – will be contributed by all five projects.



1.5. Expert Forum Page



The *Expert Forum* is a tool developed under the Greene 4.0 project. Accordingly, the structure and concept of this page are part of Greene 4.0's contribution.

1.6. News & Events Page



The structure and concept of the *News & Events* page were developed under the CI-Hub project. The content – featuring current news and events relevant to manufacturing companies – will be contributed by all five projects.

1.7. Projects Page



The structure and concept of the *Projects* page were developed under the Greene 4.0 project. The content – providing descriptions of each core project contributing to the development of the B2GreenHub platform and ecosystem – will be supplied by all five projects.



2. Development of concept, structure, and logic of the platform's backend database

1. **Registration forms** based on the questionnaires in Excel format for the following target groups were developed by Greene 4.0:

- Solutions seekers (Manufacturing companies seeking a service)
- Digital Experts
- Green Experts
- Business Experts
- Technology Solution Providers
- Infrastructure / Equipment Providers

Greene 4.0

2. Development of the backend database

The development of the backend database is the result of two projects, REUSE SI-AT and RISE. In table 1 we have provided an overview of each project's contributions for easier presentation while the following text describes the contributions in more detail.

- a) User profiles & user dashboard** – closely linked to the development of the registration forms – the overall design, concept, and logic of the user profiles and dashboard were developed by the RISE project. Additionally, under RISE, two feedback forms were created for users: one for general platform feedback and another specifically for reporting any issues encountered during platform use.
- b) The expanded database**, accessible to facilitators (all project partners of the five projects) – the overall design, concept, and logic were developed by the RISE project. This includes all sections of the backend database (Solution Seekers, Digital Experts, Green Experts, Business Experts, Technology Solutions, Infrastructure / Equipment Providers, Facilitators, Tools, and Trainings tabs (pages)), except the B2GreenHub How-to-Guide which will be explained in point c.

The preparation and the content of the B2GreenHub **How-to-Guide tab (page)** are being developed in multiple parts:

- c) The instructions for the overall platform use** (frontend logic and backend logic) for project partners as facilitators, including instructions to facilitators how to use RISE tools, are being prepared by RISE.
- d) The B2GreenHub guide on how to register to the platform**, targeted at external users and facilitators, is being prepared by RISE.
- e) The overall design, concept, and logic** are being developed by REUSE (SI-AT).
- f) The instructions for the overall platform use** (frontend logic and backend logic) for project partners as facilitators in **Slovene and German language** are being prepared by REUSE (SI-AT).



	RISE		REUSE (SI-AT)
a)	User profiles & user dashboard and two feedback forms	e)	design, concept, and logic of the B2GreenHub How-to-guide
b)	The expanded database, accessible to facilitators—the overall design, concept, and logic.	f)	The instructions for the overall platform use (frontend logic and backend logic) for project partners as facilitators in Slovene and German language
c)	instructions for the overall platform use for project partners as facilitators, including instructions to facilitators on how to use RISE tools		
d)	The B2GreenHub guide on how to register to the platform, targeted at external users and facilitators		

Table 1: RISE and REUSE (SI-AT) contributions to the backend of B2GreenHub

- 3. The translations of the B2GreenHub guide on how to register to the platform**, targeted at external users and facilitators, to Slovene and German language is developed by REUSE SI-AT.

Security remains a top priority, with optional two-factor authentication (2FA) available for users based on their access levels. Additionally, a secure authentication system enables users to log in using registered credentials.

Other core backend functionalities include:

- Profile management for companies, solution providers, and solution seekers, allowing users to update their details, add team members, and manage their visibility.
- Video content hosting with categorized video libraries, embedded YouTube support, and direct MP4 uploads.
- Assessment tools, which allow partners and admins to create, distribute, and manage questionnaires with export/import functionality.
- Help and support features, including tutorials, and a customer support contact center.

With these robust backend functionalities, B2GreenHub ensures an efficient, secure, and scalable platform for all users.



To fully understand the functionality of B2GreenHub, it's important to recognize that it operates as a dynamic platform comprising three key components: the backend, the informational site, and the marketplace. In the following sections, we will delve into each of these aspects, starting with the backend, followed by the informational site, and finally, the marketplace. The following chapters objective is to present the general function of B2GreenHub, where we present the operational aspect of the platform.

Backend

The backend of the platform is crucial to the seamless operation of B2GreenHub. Facilitators and project partners can input data into the system by registering on the platform. There is various registration options tailored for different types of users, including partners, companies, and solution providers, each with distinct access levels. Users are organized into dynamic groups, each having different levels of access and specific permissions. These varying access levels ensure that users can only access the resources and features that are relevant to their roles, maintaining security and streamlined functionality throughout the platform.

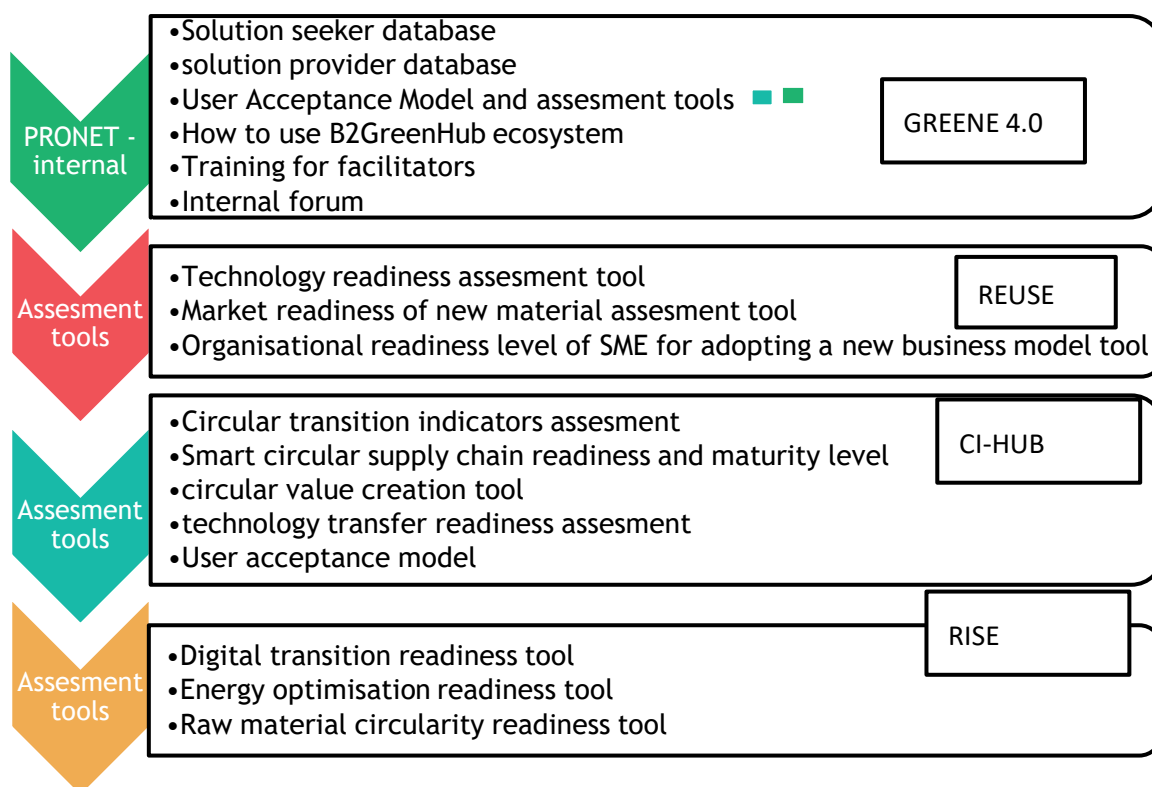


Figure 10: Backend components

To enhance user experience, the platform offers multi-template design support, enabling different layouts for specific subdomains or sections. This flexibility ensures that various programs within the platform can maintain a consistent database structure while adapting to unique design needs. Additionally, AI driven multi-language support can be integrated for future platform expansion.

A robust matching system is implemented, allowing facilitators (project partners) to search for relevant companies and solution providers using advanced filters. Results are displayed based on criteria, ensuring that users find the most relevant solutions efficiently.



The backend also supports a marketplace for digital goods and services by connecting to the frontend (Informational site). This marketplace allows companies and registered users to access a variety of services, training, solutions and testing infrastructure offered by the B2GreenHub Solution Providers and Experts.

The backend has an entirely separate interface from the front end as it serves a specific purpose. It has a separate menu that enables users to access the database. The database is a collection of solution seekers, solution providers, trainings for facilitators and tools, as presented on figure 10. The tools available have been developed through multiple EU projects, as is evident in figure 10. CI-HUB has contributed with the circular transition indicator assessment, smart circular supply chain readiness and maturity level tool, circular value creation tool, technology readiness assessment and the user acceptance model.

The platform is the result of a collaborative effort among numerous EU projects. Each project has contributed content and provided financial support to make the platform possible.

Informational site (frontend)

The first impression of the user is the **homepage**, which greets visitors with the opening message: “**Your gateway to green & digital transition.**”

This homepage serves as an entry point to the platform, introducing **B2GreenHub** as a tool designed to empower **manufacturing companies** in leading **sustainability** and **digital transformation**. The homepage also features:

- An **overview** of the platform’s main services.
- A **sign-up/login section** for different user types.
- A **search bar** to help users quickly find relevant information.
- A **language selection option**, offering multiple EU languages.
- A structured **header and footer** for easy navigation.



2.1. Resources

From this starting point, users can explore various resources categorized under the Resources section (figure 11), which includes the following subcategories:

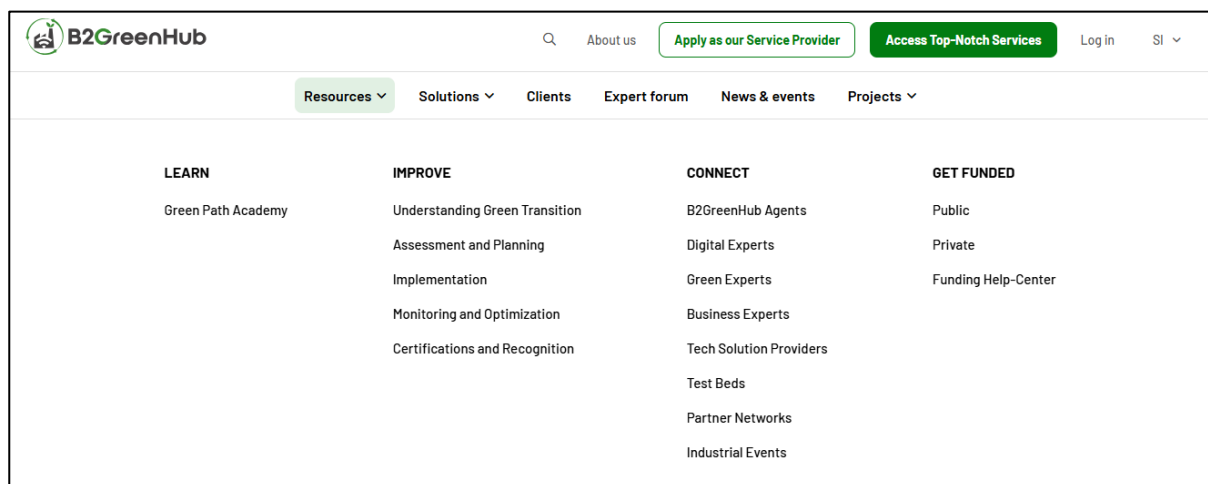


Figure 11: Resources – first mockup

2.1.1. Learn

The **Learn** section is dedicated to educational materials that help companies understand and adopt new technologies. It features:

- **Green Path Academy** - A structured learning hub offering educational content on sustainability, digitalization, and innovative industry practices.
- **Expert-reviewed resources** to ensure credibility and applicability.
- **Categorized video content.**

2.1.2. Improve

The **Improve** section is designed to help companies enhance efficiency by providing various tools for digital and green transformation.

Subcategories:

- **Understanding Green Transition** - Foundational knowledge on sustainable practices and their impact.
- **Assessment and Planning** - Tools to evaluate a company's current position and develop a sustainability roadmap.
- **Implementation** - Step-by-step guidance on executing transformation strategies.
- **Monitoring and Optimization** - Tools for tracking progress and refining sustainability efforts.
- **Certifications and Recognition** - Information on industry standards and certifications to validate sustainability efforts.



Key Features:

- Access to customized sustainability assessments based on company needs.
- Exportable reports in various formats.

2.1.3. Connect

The **Connect** section is dedicated to **networking and collaboration**, bringing together key players in the green and digital transition. This section showcases the B2GreenHub technology solution providers, providers of testing infrastructure and equipment, and digital, green, and business experts. Additionally, it also shows other partner networks and industrial events relevant to manufacturing companies seeking solutions.

Subcategories:

- **B2GreenHub Agents** - Dedicated platform representatives (project partners acting as facilitators) assisting users.
- **Digital Experts** - Specialists in digital transformation technologies (figure 12)
- **Green Experts** - Specialists in sustainability and green technologies.
- **Business Experts** - Consultants guiding companies in sustainable business strategies.
- **Tech Solution Providers** - Companies offering innovative technological solutions.
- **Test Beds** - Facilities where companies can test and validate new technologies.
- **Partner Networks** - A directory of ecosystem partners.
- **Industrial Events** - Information on key conferences, exhibitions, and networking events.

Digital Experts

At every stage of their transformation, we guide SMEs toward achieving sustainability goals. Our dedicated facilitators are here to provide the insights, tools, and support necessary for navigating the complexities of digital and green practices.

Filter by field

Filter by country

Filter by project

John Doe
Denube Region CI-Hub
Digital transformation • Green expert • Soft services expert • Technical solutions
Facilisi morbi platea tincidunt egestas non tellus neque lobortis. Convallis sit lorem faucibus fermentum sed odio fames laoreet ultrices. Pellentesque ultrices.
[More info](#) [Work with me →](#)

Samantha Smith
REUSE
Digital transformation • Green expert • Soft services expert • Technical solutions
Facilisi morbi platea tincidunt egestas non tellus neque lobortis. Convallis sit lorem faucibus fermentum sed odio fames laoreet ultrices. Pellentesque ultrices.
[More info](#) [Work with me →](#)

Samantha Smith
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Digital transformation • Green expert • Soft services expert • Technical solutions
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[More info](#) [Work with me →](#)

Tim Stone
REUSE
Digital transformation • Green expert • Soft services expert • Technical solutions
Facilisi morbi platea tincidunt egestas non tellus neque lobortis. Convallis sit lorem faucibus fermentum sed odio fames laoreet ultrices. Pellentesque ultrices.
[More info](#) [Work with me →](#)

Figure 12: Example of the Connect subcategory: First version mockup for Digital Experts

COOPERATION IS CENTRAL

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Key Features of the Connect section:

B2GreenHub ecosystem map on the main Connect page, visually displaying B2GreenHub stakeholders.

- Filtering system for easier navigation between different types of providers.
- Event listings and opportunities for B2B matchmaking.

2.1.4. Get Funded

The **Get Funded** section provides companies with comprehensive information on available funding opportunities and **assistance in securing financial support** for their sustainability and digital projects.

Subcategories:

- **Public Funding** - Government and institutional funding programs.
- **Private Funding** - Investment opportunities from venture capitalists, private equity, and industry grants.
- **Funding Help-Center** - A dedicated space for funding support including relevant tools.

Key Features:

- Integration with external funding databases to display up-to-date opportunities.
- Access to useful tools, addressing improvement for investment opportunities, and available funding opportunities.

2.2. Solutions

The Solutions section of the platform is designed to provide companies with expert-driven strategies for integrating sustainability and digitalization across key business areas. Here, a user can view concrete solutions and their applications presented by use-cases.

The solutions section is divided into two categories:

- Green technological solutions and
- Digital technological solutions.

Green technological solutions on the platform allow companies to browse a wide range of options related to renewable energy, energy-efficient equipment, waste reduction technologies, and carbon capture & storage innovations. While businesses can explore and evaluate these solutions independently, facilitators are available to advise them on the best course of action and connect them with the appropriate solution provider. This approach ensures that companies receive the guidance they need to effectively integrate sustainable technologies into their operations.

Digital technological solutions focus on areas such as IoT, Edge computing, digital twin, automation, robotics, data analytics, artificial intelligence, additive manufacturing, cyber security, digital trust and blockchain. While businesses can explore and evaluate these solutions independently, facilitators are available to advise them on the best course of action and connect them with the appropriate solution provider. This approach ensures that companies receive the guidance they need to effectively integrate sustainable technologies into their operations.



The platform categorizes these solutions into key manufacturing operations. The solutions sections are divided into the following subcategories:

- Outbound logistics,
- Customer service,
- Operations,
- Marketing & Sales,
- Inbound logistics,
- Infrastructure,
- Human resources management,
- Technology development,
- Procurement.

2.3. Clients

The purpose of the Clients section is to showcase the SME's that have already utilized B2GreenHub. It is a collection of successful use-cases. On figure 12 you can see the first version of the Clients section. As visible a user will be able to have an overview of all the clients and the possibility to click on *view more, where more information will be provided.

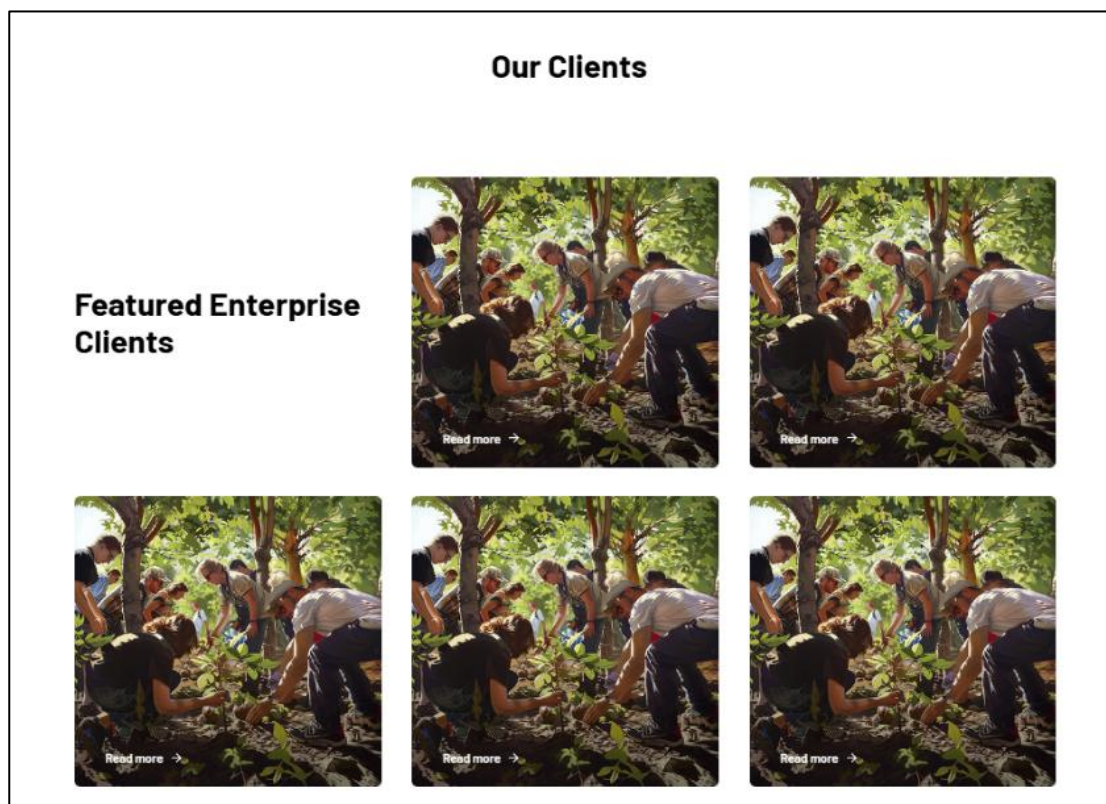


Figure 13: First version mockup of the Clients section on B2GreenHub



2.4. Expert forum

A key feature of the front end is also the Expert Forum. The users' first impression of the forum will be the homepage which was designed to be easy to use and allows an organized view of the content. On the left side of the homepage a fixed column appears visible on all forum pages which allow access to:

- The search bar,
- Market sector,
- Focus areas,
- Experts and
- Users.

The forum has filtering options which enable easy sorting through the content. The content is sorted into market sectors: electronics, plastics & rubber, food & beverage, Machinery and equipment, Pharmaceutical and Chemical, Building materials and furniture, metal and general. It is also sorted into two categories, green and digital. Users can search for forum content by keywords that mark a user's interests and needs. Filtering will be possible by category and by country. Additionally, users will be able to bookmark a post, use tags on posts and like comments.

When creating a post, a user has the option to check multiple tags, input the title and type the content (max. 7000 characters for a post) and add files such as images. Finally, the expert forum also includes a report button and accessibility functionalities.

2.5. News & Events

The news and events section showcases news and upcoming events for all things green and digital. The platform allows the filtering of results based on two categories: news and event. As seen on figure 13, users will be able to browse the content and access more information by clicking on the desired content.

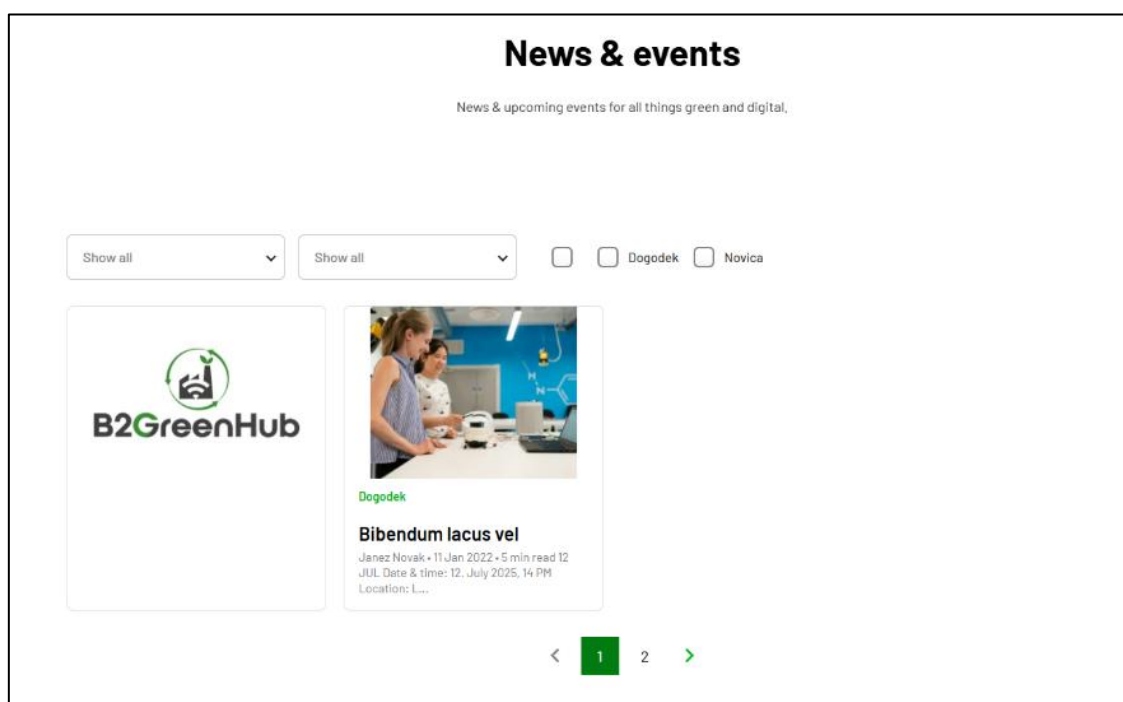


Figure 14: First version mockup of the News and events section on B2GreenHub



2.6. Projects

This section is dedicated to highlighting the EU projects that made the platform possible. B2GreenHub is supported by several EU projects with GREENE 4.0, RISE, CI-HUB, REUSE and DANUBE DNA being the core projects that financed the platform's development and operations. These projects also contribute content, including tools, use cases and learning materials. On the platform itself each project will have a dedicated page with a presentation of each contributing project as presented on figure 16.

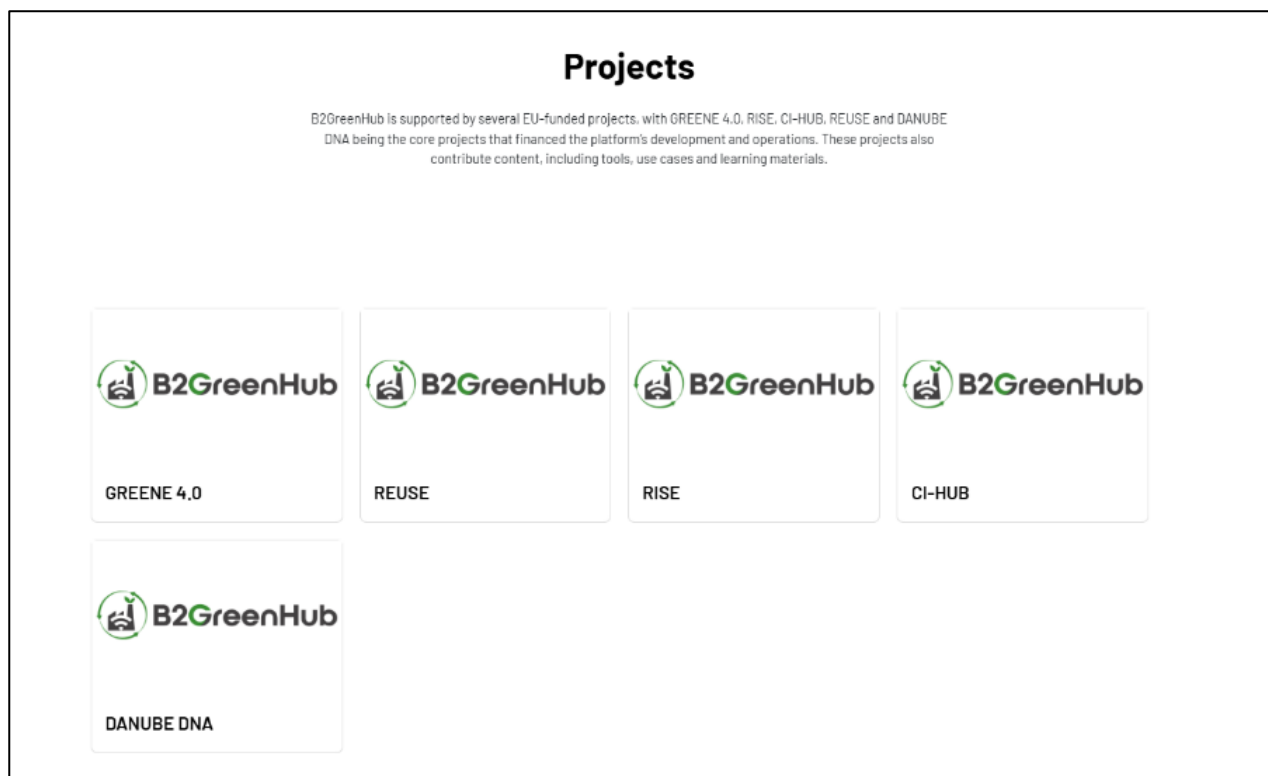


Figure 15: First version mockup of the projects section on B2GreenHub



Marketplace

The Marketplace offers a wide selection of applications designed to meet various needs and preferences. It features a diverse range of solutions, services, training, testing infrastructure and equipment offered by the B2GreenHub providers. Every offer in the Marketplace has a detailed description that outlines their purpose, key manufacturing process and benefits.

The Marketplace highlights key features to give users a clear understanding of each offer. In summary, the Marketplace serves as a one-stop destination for exploring and inquiring after a broad variety of offerings, all while providing a seamless experience for users.

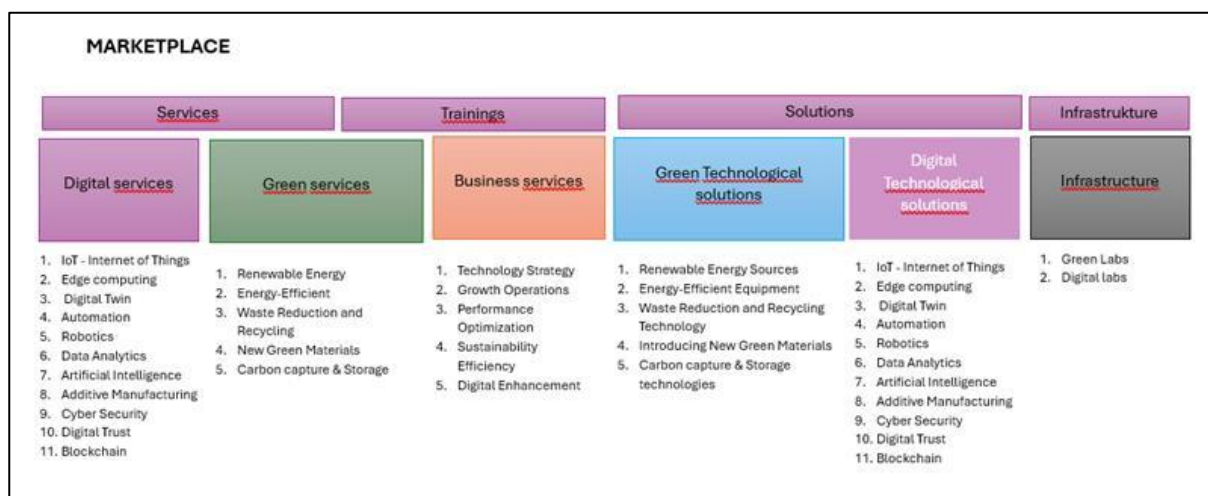


Figure 16: Wire-frame of Marketplace

B2GreenHub includes the marketplace, which is a section of the platform where the list of available applications is gathered. It is divided into four categories:

1. Services,
2. Training,
3. Solutions,
4. Infrastructure.

2.7. Services

Services are divided into three subcategories:

1. **Digital services**, which focus on technologies such as IoT, Edge Computing, Digital twin, Automation, Robotics, Data Analytics, AI, Additive Manufacturing, Cyber Security, Digital Trust and Blockchain. These digital services provide organizations with tools to improve efficiency, security, and innovation across various operations.
2. **Green services**, which focus on technologies such as Renewable Energy, energy efficiency, waste reduction and recycling, new green materials and carbon capture and storage. These green services



support organizations in adopting sustainable practices, reducing environmental impact, and advancing eco-friendly solutions across energy, waste, and materials management.

3. **Business services**, which focus on technology strategy, growth operations, performance optimization, sustainability efficiency and digital enhancement. These business services help organizations improve operational performance, drive growth, and enhance sustainability through strategic use of technology and digital solutions.

Overall, these services provide a comprehensive range of solutions that enable organizations to enhance efficiency, drive sustainable growth, and leverage advanced technologies to stay competitive in an evolving market.

2.8. Training

The training section on the platform offers targeted trainings for each of the three components—green, digital, and business services. These courses are designed to equip users with the necessary skills and knowledge to effectively implement and manage the relevant technologies and strategies within their organizations.

2.9. Infrastructure

This section is divided into two subcategories:

1. **Green labs:** Green labs focus on developing and testing sustainable, eco-friendly solutions that promote environmental conservation and circular economy practices.
2. **Digital labs:** Digital labs concentrate on exploring and implementing cutting-edge digital technologies, fostering innovation in areas such as automation, data analytics, and digital transformation.

SMEs will have access to a wide range of resources, with facilitators ensuring the optimal match to meet their specific needs.

2.10. Additional Functionalities

- **Multi-template layout support:** B2GreenHub offers support for multiple layout templates, allowing different sections of the platform to have unique visual designs while maintaining a consistent and unified database structure.
- **AI-driven multilingual support:** Integrated artificial intelligence ensures fast, accurate, and automatic translation across multiple languages, enabling smooth user experiences regardless of linguistic background.
- **API connectivity:** The platform enables seamless integration with external systems through API connectivity, facilitating connections with platforms like F6S and various analytics tools.

With these advanced features and structured resources, B2GreenHub ensures that users can effortlessly navigate the platform to access learning materials, optimize operations, build strong industry connections, and secure funding to support their green and digital transformation journey.



E. Conclusion

This Technical Architecture for GREENE 4.0 innovation platform has served to describe the software architecture requirement, the needed integration parameters, the interoperability requirements and the needed interaction between new functionalities/services and old features.

We have shown the multi-project efforts that have enabled the platform to be developed. Initially we presented the content contribution made by each project followed by a financial contribution overview.

Next, a thorough presentation of the actual functionality of the platform has been presented, which will enable a clear visualization of the final product, a fully functional B2GreenHub.

The development of the GREENE 4.0 innovation platform, through its transformation into the B2GreenHub, marks a significant milestone in supporting Central European manufacturing SMEs on their path to green and digital transition. By integrating tools, services, and expertise from multiple EU-funded projects, the platform provides a unified, dynamic, and user-centric environment designed to foster innovation, strengthen regional value chains, and overcome systemic supply chain challenges.

With its robust backend architecture and intuitive frontend interface, B2GreenHub empowers users—from solution seekers to policy makers—to access, contribute to, and benefit from a collaborative ecosystem. The platform's comprehensive features, including tailored learning resources, solution marketplaces, expert networking tools, and funding support, ensure that all key stakeholders are actively engaged in the transition process.

As GREENE 4.0 continues to evolve and expand its functionalities, the platform will remain a cornerstone of sustainable industrial transformation in Central Europe, reinforcing the region's innovation capacity and competitiveness in a global, interconnected economy.