National Technical University of Athens

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UNIVERSITÀ DEGLI STUDI DI BARI ALDO MORO

D6.2 TwInn4MicroUp FUNCTIONAL WEBSITE

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Partners

NTUA: Ethnicon Metsovion Polytechnion (National Technical University of Athens)

TUS: Technological University of the Shannon: Midlands Midwest

IMGGE: Institute of Molecular Genetics and Genetic Engineering, University of Belgrade

UNIBA: Università Degli Studi Di Bari Aldo Moro

Abbreviation List

Completely Automated Public Turing test to tell Computers and Humans Apart: reCAPTCHA, 14
Cumulative Layout Shift: CLS, 15
Dissemination, Exploitation, Communication: DEC, 6
Interaction to Next Paint: INP, 15
Largest Contentful Paint: LCP, 15
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Uniform Resource Locator: URL, 6
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1. Executive Summary

The present document reports on the establishment of the initial content of the TwInn4MicroUp website. It describes the objectives that the website intends to address, its structure and its functionalities. The actual deliverable is available at http://twinn4microup.eu. The official TwInn4MicroUp website, launched in October 2024 (M2), serves as the primary source of information about the project's identity, goals, and progress. Created and managed by NTUA, while supported and guided by IMGGE as Work Package (WP) 6 leader, the website will be regularly updated throughout the project's duration and for two additional years post-completion. It is designed to be user-friendly and aligns with the project's visual identity, ensuring comprehensive and transparent data access. Visitors can find up-to-date information about the project's partners, structure, activities, and achievements. The website targets a diverse audience, including scientific and commercial researchers, relevant industries, and the general public. Key features of the TwInn4MicroUp website include a newsletter subscription and a contact form. Additionally, it offers downloadable documents such as flyers, bookmarks, roll-ups, and posters, which are prepared and distributed or presented at in-person events. The styling, language, and tools used on the website are carefully selected to meet the communication objectives and target audiences of the project.

2. Project Overview

TwInn4MicroUp is a 3-year project funded by the EU Horizon Europe HORIZON-WIDERA-2023-ACCESS-02, which started in September 2024. It involves four partners of which three from EU countries (Greece, Ireland and Italy) and one Associated Country (Serbia), all research institutions. The primary objective of the TwInn4MicroUp project is to significantly enhance the competitiveness and capabilities of NTUA in the areas of Project Management and Administration, Budget Acquisition, and Synthetic Microbial Biotechnology research. This enhancement aims to elevate NTUA's research profile, contributing to the advancement of European socioeconomic goals. TwInn4MicroUp aims to introduce an innovative approach to upcycling plastic waste by utilizing green biological/mechanical/chemical technologies to recover plastic monomers. This project will leverage modern molecular techniques to develop microbial cell factories that can produce bioactive compounds from plastic-derived feedstocks. This advancement has the potential

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to transform industries related to bio-colorants, biotherapeutics, bio-nutraceuticals, biosurfactants, and biomaterials.

2.1 Introduction

To align with the Horizon Europe funding, TwInn4MicroUp is hosted on a ".eu" domain (https://twinn4microup.eu), that has been secured for the full duration of the project, plus an additional two years. The initial version of the website was launched two months after the project's commencement, in October 2024. Given its importance as an extension and communication interface for the project, the website will undergo continuous development, modifications, and updates throughout the project's lifecycle.

2.2 Objectives

The development of the TwInn4MicroUp website is part of WP6, focusing on the outreach, communication and dissemination of project results. Its goal is to communicate the project's achievements and benefits to relevant target groups, including the scientific and technical community, industry professionals, other research projects, and the general public.

3. The TwInn4MicroUp Website

3.1 General

The project website is the primary contact point for those interested in the project. It must be clear, comprehensive, and regularly updated with information on current challenges, recent presentations, and other project-related details, while ensuring confidentiality and data security. To ensure the website is easily updated throughout the duration of the project, we decided to use a well-known content management system which allows for quick generation of project-related news without the necessity of prior technical knowledge. Another technical requirement was the ability to extend the system with third-party plugins, which is especially important for newsletter subscription that should be seamlessly integrated in the technical platform. Based on these requirements, we decided to use WordPress[1] as a technical platform of the project website, as a

[1] https://wordpress.com/

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web-framework, and as blogging engine. WordPress is a flexible, user-friendly, and open-source content management system that can be installed on your own server. It offers an intuitive user interface for website administrators to create new blog posts and supports advanced user management with fine-grained access rights. There is high availability of third-party plugins to extend functionality, and there is established connection to the most popular social networks.

The TwInn4MicroUp project website has been designed and developed by the Computer Center Unit of the NTUA Chemical Engineering School and the Project Coordinator. The website together with all relevant files, is hosted at a server located at the NTUA School of Chemical Engineering premises. Google Analytics[2] is utilized for measuring website outreach and visits. Open Graph meta tags have been added for eye-catching & impactful Uniform Resource Locator (URL) display when shared on social media. The website's aesthetics and colour scheme adhere to the project's established visual identity (*see Deliverable 6.2 Dissemination, Exploitation, Communication (DEC*), ensuring memorable features for visitors. Several open-license images have been added next to the text for enhanced communication and will be replaced by project-generated images once the latter become available. The header of the website (**Figure 1**) remains fixed at the top of the screen while scrolling within the page, featuring the project's logo on the left and easy navigation to the rest of the tabs of the website. The footer of the website (**Figure 2**) remains the same across the entire website and contains a brief overview of the project, together with the following:

- Hyperlink to Cordis project profile[3]
- EU funding acknowledgments
- Email contact
- Social media hyperlinks
- Newsletter subscription form
- Copyright disclaimer
- Legal pages
- Disclaimer mandated by the Grant Agreement (17.3)

[2] https://analytics.google.com
[3] https://cordis.europa.eu/project/id/101159570

Figure 1. Website header

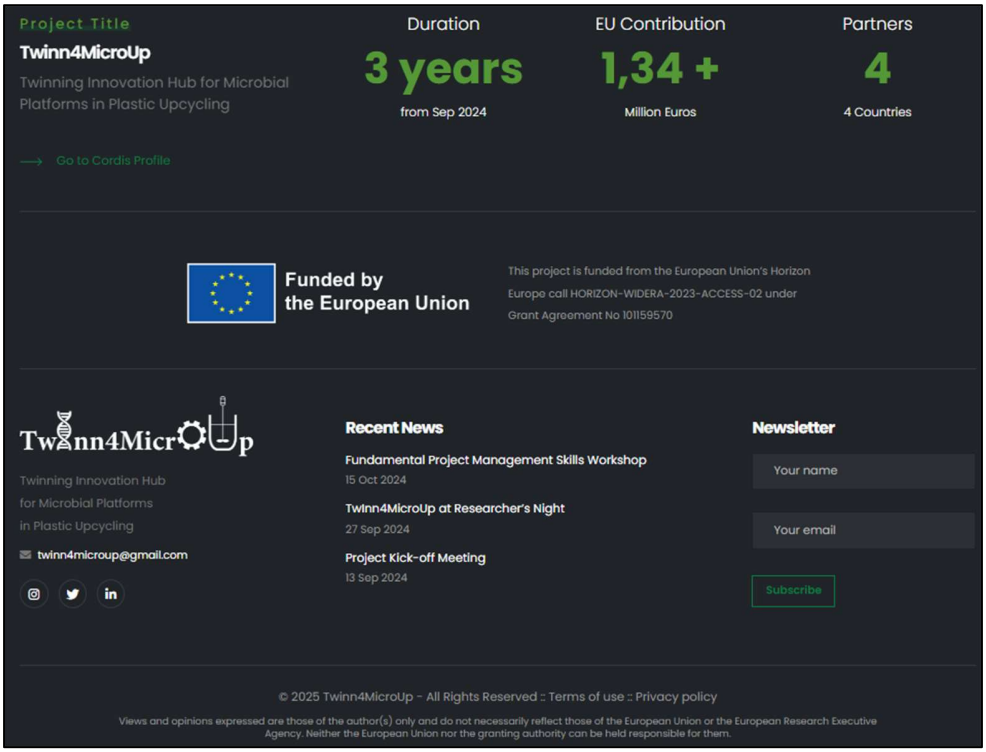

Figure 2. Website footer

3.2 Structure and Content

3.2.1 Home page

At the top of the Home page of the TwInn4MicroUp website, the project logo is depicted in front of a designed background that is part of our visual identity, together with an informative slogan and simple infographics presenting the general idea of the project (**Figure 3**). The Home page of the TwInn4MicroUp website states the mission of the project (**Figure 4**), briefly presents the consortium with hyperlinks to the Partners page (**Figure 5**), highlights the concept of Synthetic Microbial Platforms for Plastic Upcycling (**Figure 6**), and summarizes the three most recent records from the News page of the website with relevant hyperlinks (**Figure 7**). While scrolling within the Home page, the social media handles remain fixed at the the top right side for easier accessibility.

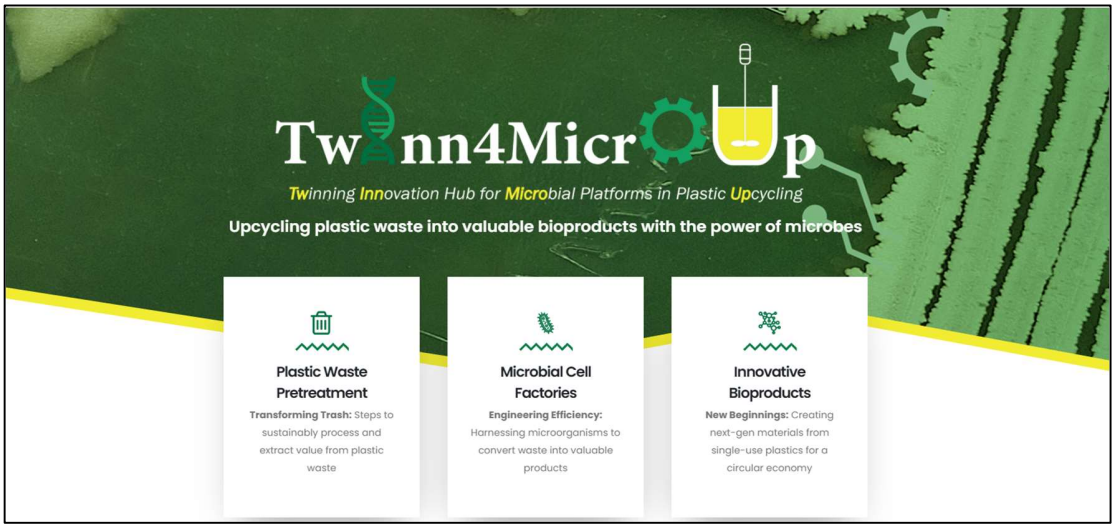

Figure 3. Home page (top)

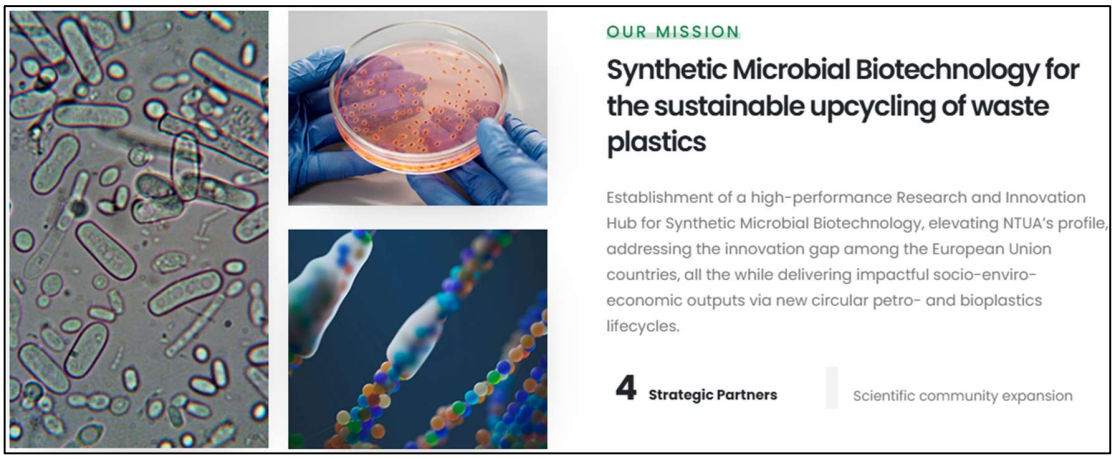

Figure 4. Home page (mission)

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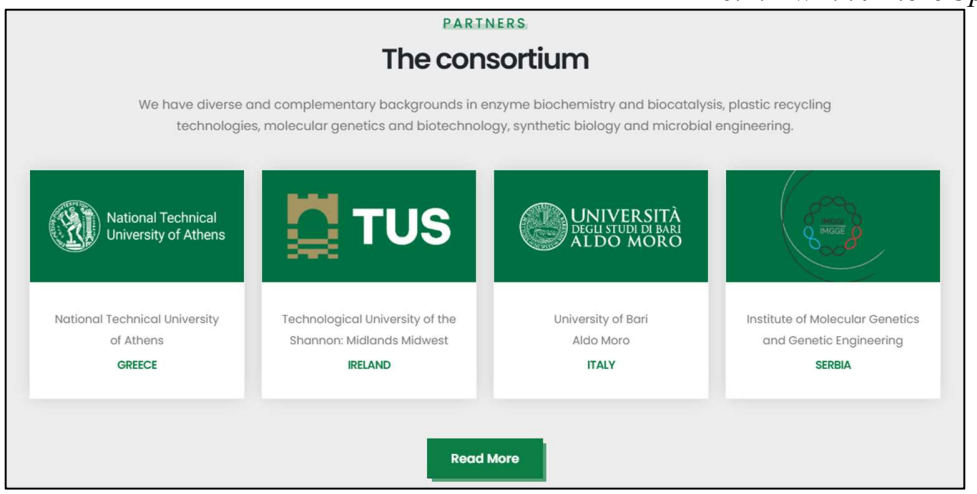

Figure 5. Home page (consortium)

Figure 6. Home page (concept)

Figure 7. Home page (recent news)

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3.2.2 About page

The About page of the TwInn4MicroUp website provides more information about the challenge and our vision (**Figure 8**), the specific objectives (**Figure 9**), the WP structure of the project (**Figure 10**), as well as the expected impact (**Figure 11**).

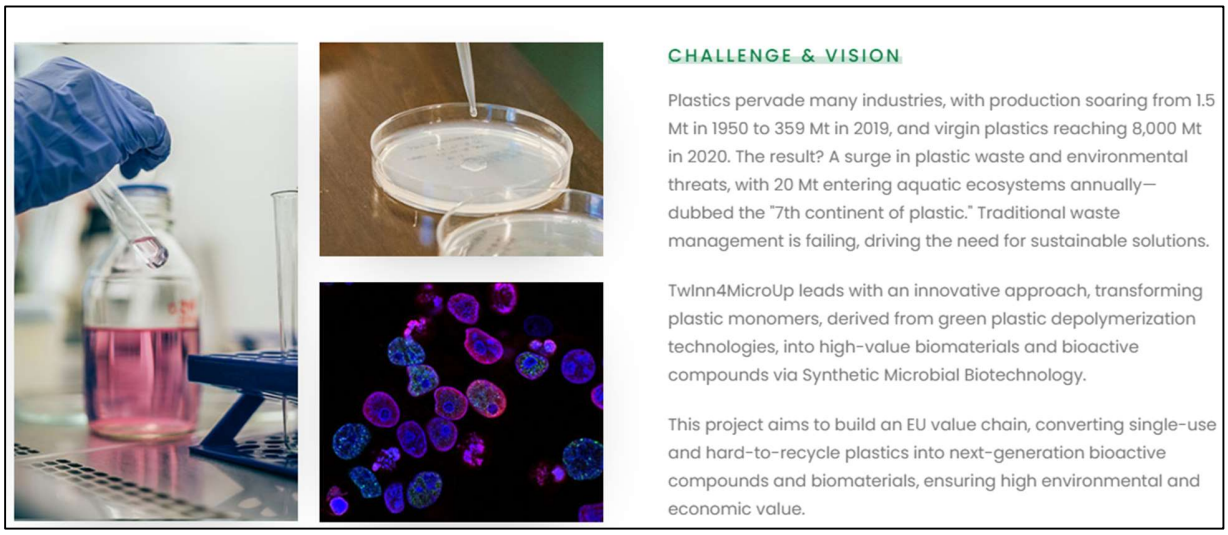

Figure 8. About page (challenge and vision)

Figure 9. About page (objectives)

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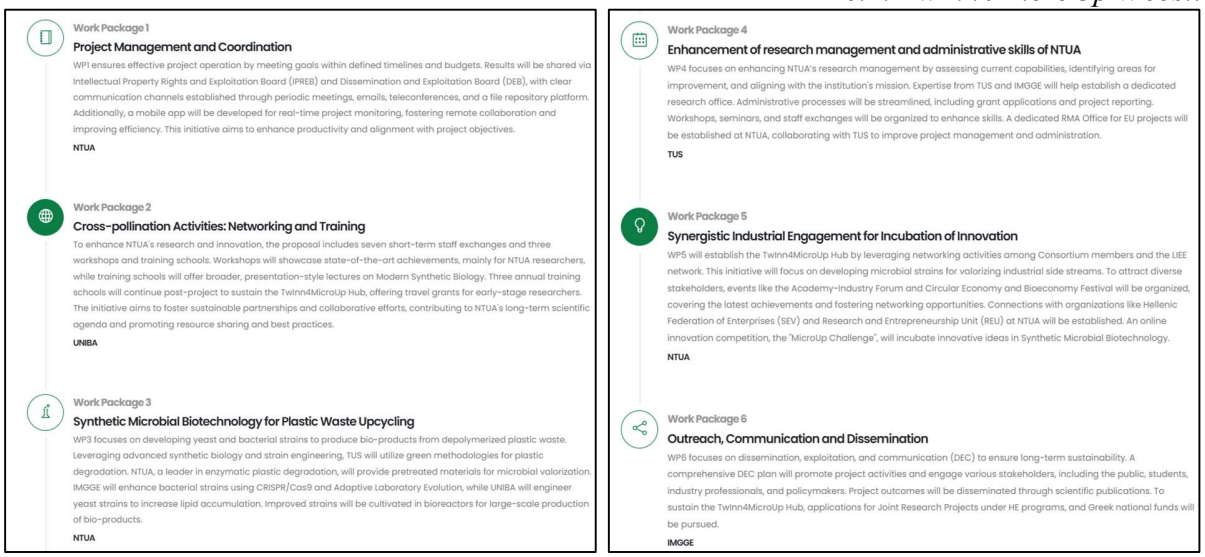

Figure 10. About page (structure)

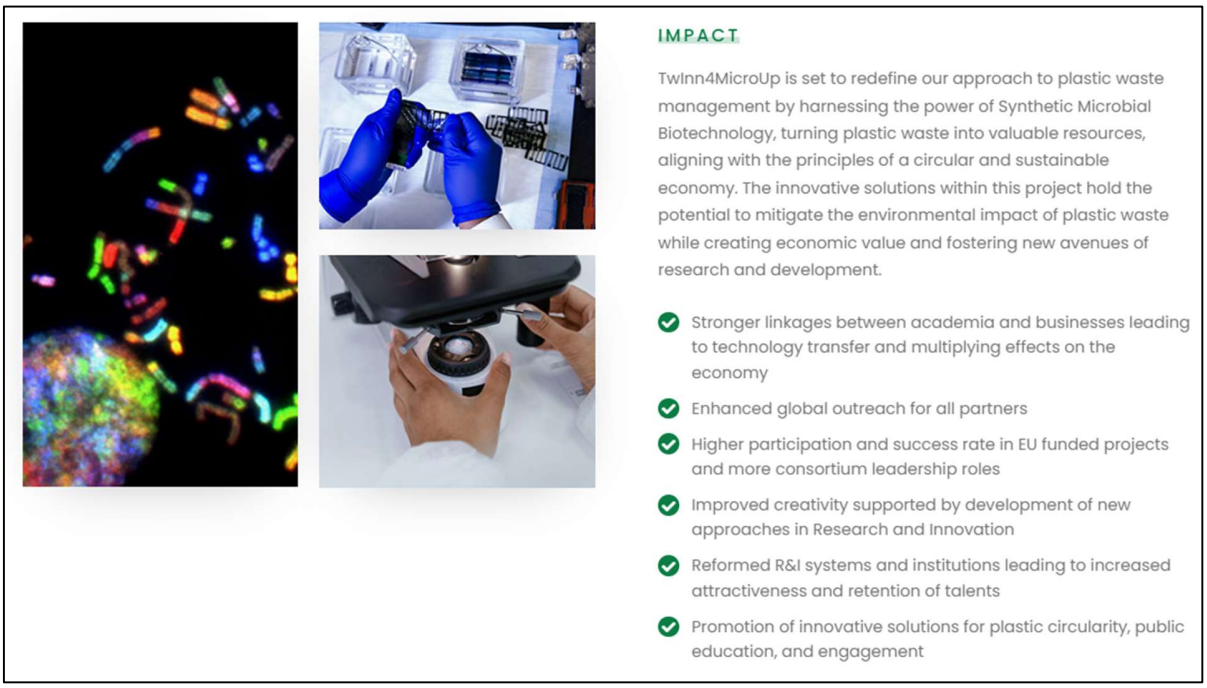

Figure 11. About page (impact)

3.2.3 Partners page

Each partner is presented within a separate section that follows the same structure (**Figure 12**). On the left, there is the institution's information with logo, name, address, country, and website. In the middle of the section, there is a short description of the research group(s) participating in the

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TwInn4MicroUp project along with a link to each respective group. On the right, there is a photo of the group leader (and the project partner in case these are different people), that holds a hyperlink to their Open Researcher and Contributor Identifier (ORCID)[4] profile. Clear labels in each partner section specify the WP(s) they lead.

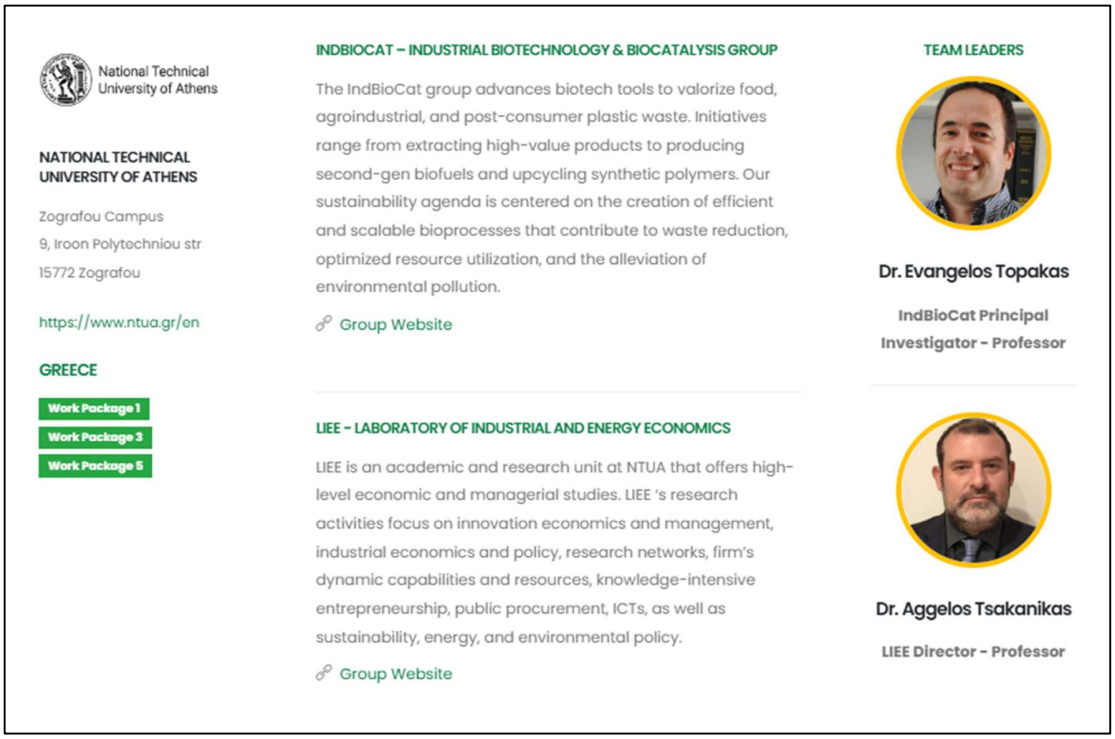

Figure 12. Partners page (NTUA)

3.2.4 News page

The News page includes posts about diverse project activities, including meetings, workshops, seminars, public outreach participation, press releases, as well as news from other ongoing activities relevant to the scientific fields of the TwInn4MicroUp project. Each post includes a cover image, a category label, a title, a date, a brief informative excerpt, and a link to the full post (**Figure 13**). The full post is comprised of a short article describing the activity, photos from the event, and other pertinent information, e.g., conference website (**Figure 14**).

[4] https://orcid.org/

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Figure 13. News page (post overview)

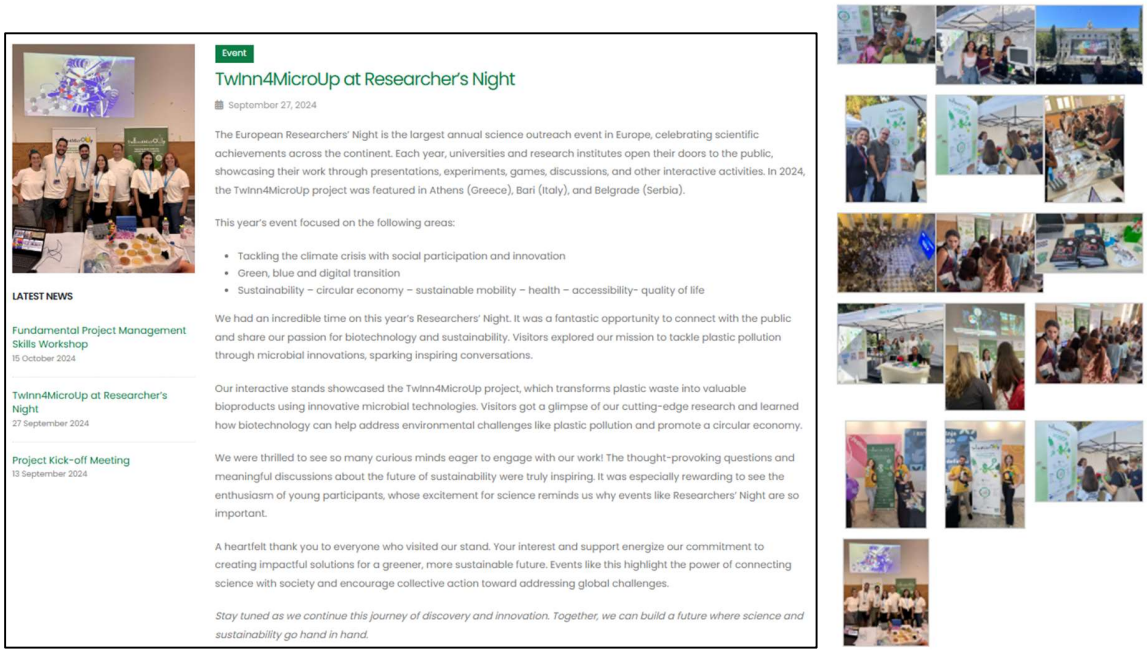

Figure 14. News page (full post)

3.2.5 Downloads page

The Downloads page contains freely available materials, ranging from communication kit documents to scientific publications, newsletters, and public reports (**Figure 15**).

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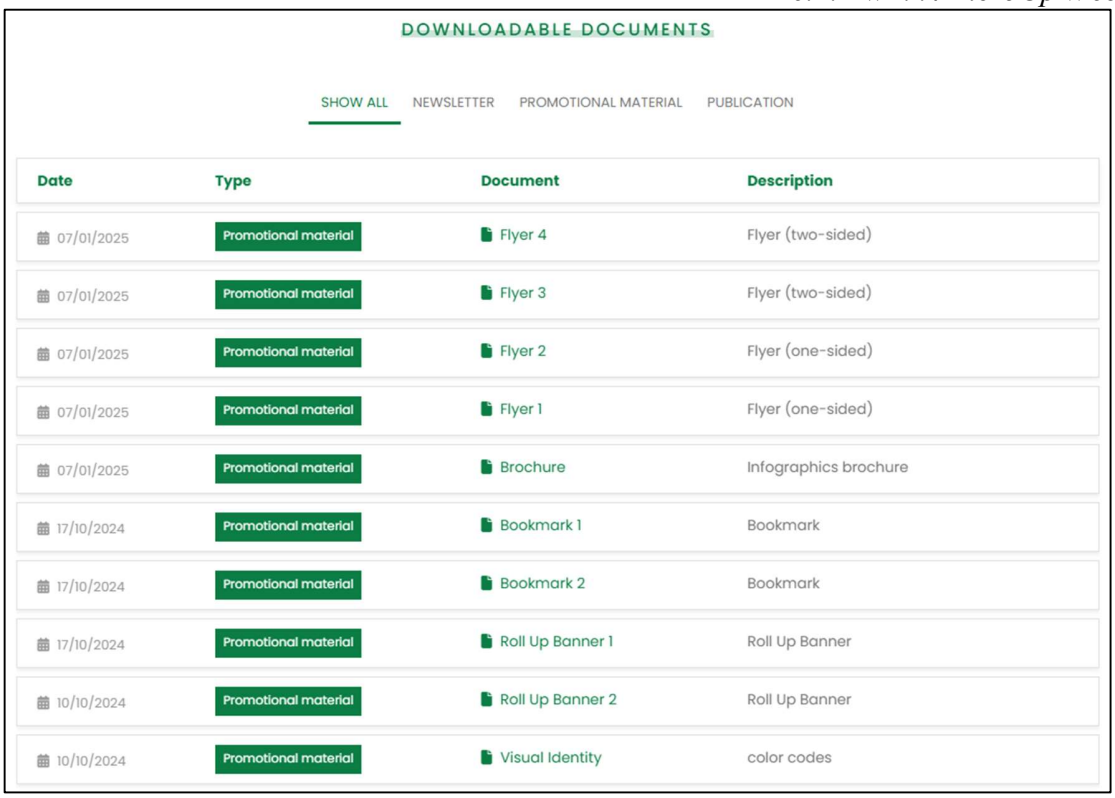

Figure 15. Downloads page

3.2.6 Hub page

The TwInn4MicroUp project aims to establish an advanced research and innovation hub in Synthetic Microbial Biotechnology. This hub will unite diverse stakeholders, including academia, industry professionals, journalists, educational institutions, and public sector entities, all committed to a shared vision. The Hub page of the TwInn4Microup website will list these members to underscore the importance of collaboration and synergy in promoting a sustainable future.

3.2.7 Contact page

The Contact page offers newsletter subscription and a built-in contact form, with a Completely Automated Public Turing test to tell Computers and Humans Apart (reCAPTCHA) integration module for spam protection. Additionally, it lists one contact person per participating research group with their full contact details (**Figure 16**).

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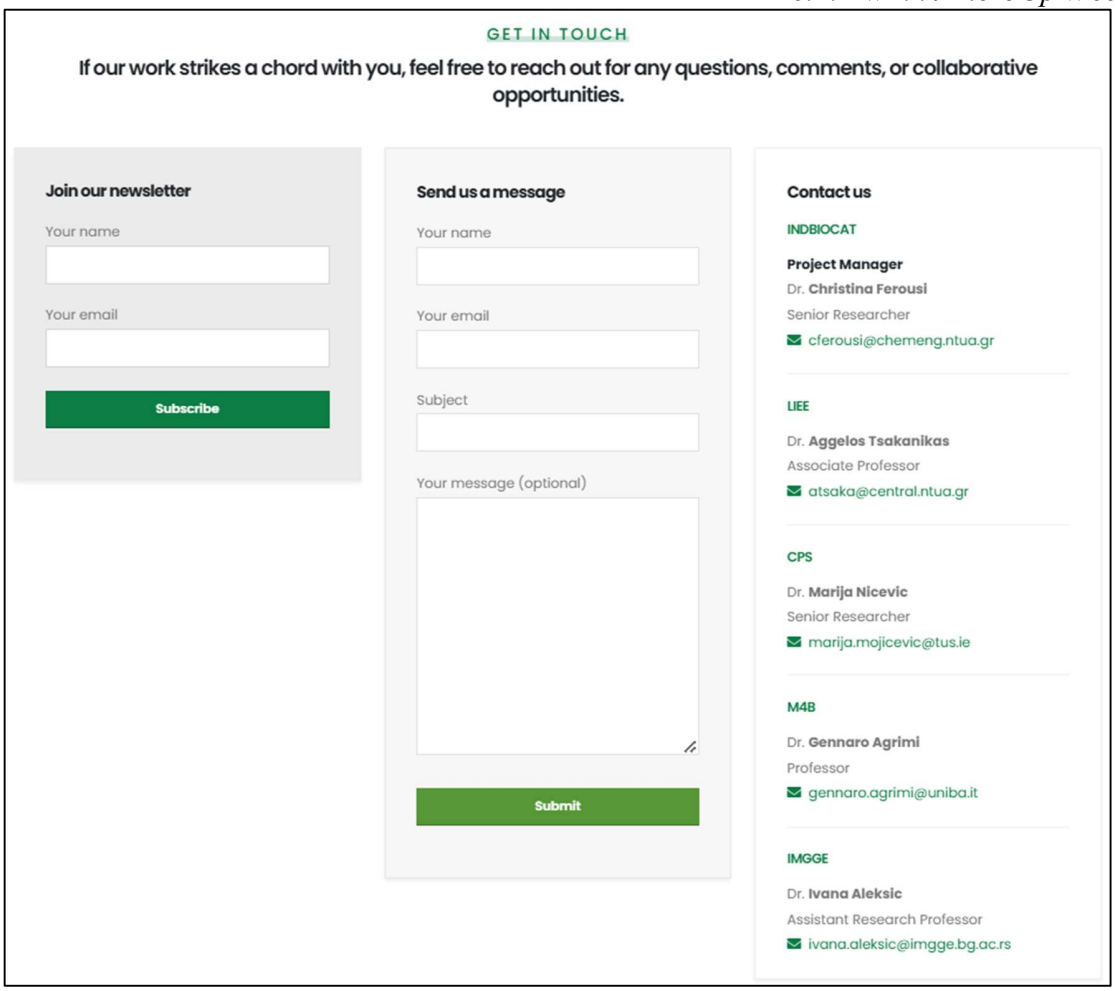

Figure 16. Contact page

3.3 Performance Tracking

To evaluate the TwInn4MicroUp website performance, we utilize Open Chrome DevTools[5]— a set of web developer tools built directly into the Google Chrome browser—measuring the core web vitals metrics, i.e., Largest Contentful Paint (LCP), Cumulative Layout Shift (CLS), and Interaction to Next Paint (INP). LCP measures the time taken for the largest content element to become visible within the viewport, indicating loading performance. CLS evaluates visual stability by tracking unexpected layout shifts, ensuring a smooth visual experience for users. INP gauges the responsiveness of the site by measuring the time taken for the next paint after user interaction, providing insights into the website's interactivity. To classify the overall performance of the

[5] https://developer.chrome.com/docs/devtools

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TwInn4MicroUp website, we use the 75th percentile value of all page views, and the thresholds indicated in **Table 1** (**Appendix**). Essentially, if at least 75 percent of page views meet the "good" threshold, the site is classified as having "good" performance for that metric[6].

Table 1. Core web vitals metrics thresholds.

Metric	Performance Classification	
	Good	**Poor**
Largest Contentful Paint	≤2,500 ms	>4,000 ms
Cumulative Layout Shift	≤0.1	>0.25
Interaction to Next Paint	≤200 ms	>500 ms

[6] https://web.dev/articles/defining-core-web-vitals-thresholds

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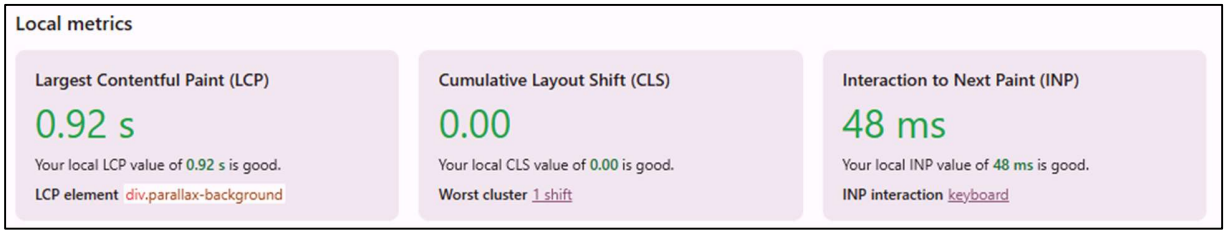
Annex



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