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GREENE 4.0

D1.5.1 – Transnational Conference Dissemination Report

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Contents

List of Figures

List of Tables

A. Executive summary

The Greene 4.0 Transnational Conference focused on the circular economy and its relevance to fostering sustainable practices among small and medium-sized enterprises (SMEs). The conference aimed to disseminate key outputs from WP1, particularly the User Acceptance Model, which serves as a vital tool for enabling SMEs to navigate their green transitions effectively.

Attended by project partners, industry representatives, research institutions, educational organizations, and policymakers, the event featured a diverse agenda that included presentations on renewable energy, bioeconomy, and zero-waste manufacturing, as well as discussions on electronic and biological waste management. A notable highlight was the introduction of the B2GreenHub, which, with inputs of Greene 4.0, will provide European manufacturing companies with access to innovative solutions, expert advice, and essential tools for their green and digital transformations.

The conference's success was further amplified through extensive media coverage. It was prominently featured on the official Greene 4.0 project webpage, with additional dissemination by local news outlets, and project partners. The event also gained visibility through the Greene 4.0 newsletter and was highlighted on social media platforms, showcasing strong audience engagement and interaction.

Overall, the Greene 4.0 Transnational Conference not only achieved its primary goals of disseminating valuable research outputs and fostering collaboration among stakeholders but also established a foundation for ongoing communication and engagement in the fields of sustainability and green innovation.

B. Introduction

Purpose and Scope

The primary objective of the Greene 4.0 Transnational Conference was to disseminate the outputs and results of WP1, with a particular focus on the User Acceptance Model. This model aims to facilitate a smooth green transition for small and medium-sized enterprises (SMEs). The conference aimed to reach representatives from companies, research institutions, educational organizations, and policymakers interested in green and digital practices.

Additionally, a secondary goal of the conference was to showcase the B2GreenHub, a platform designed to provide European manufacturing companies with access to innovative solutions, expert guidance, and equipment essential for their green and digital transitions. The Greene 4.0 initiative is actively developing the B2GreenHub, which will serve as a comprehensive resource for manufacturing companies across Europe, equipping them with the necessary tools and strategies to support their sustainable transformation efforts.

C. Transnational Conference

Summary of the Event and Highlights

The Transnational Conference was organized as part of a larger event. The conference took place at Grand Hotel Bernardin in Portorož, Slovenia, on the second day of the 7th International Conference on Technologies and Business Models for Circular Economy (TBMCE), on September 5th, 2024.

The event brought together companies, research institutions, educational organizations, and policy makers eager to dive into the latest green and digital practices and engage in in-depth discussions on circular economy.

A range of speakers with expertise and experience in the topics of green and digital gave the participants the opportunity to explore topics related to science and development, focusing on the current challenges of technological advancement and society's responsibility in transitioning from fossil fuels to renewable energy sources, and from a linear to a circular economy.

As the key highlight of the Transnational Conference, Greene 4.0 presented the User Acceptance Model for facilitating a smooth green transition for small and medium-sized companies. Furthermore, as Greene 4.0 is also one of the key projects contributing to the development of the B2GreenHub platform which will enable companies to connect and access tools for digital and green transformation, the participants were also able to talk to our facilitators at the B2GreenHub stand and find out more on how they can accelerate their business and become part of the green tomorrow.

The event offered a distinct chance to engage with industry experts, researchers, and peers, while giving the attendees the opportunity to explore the latest trends, exchange ideas, and discover best practices. Overall, the event provided valuable insights and fostered connections that will drive future growth and innovation in the industry.

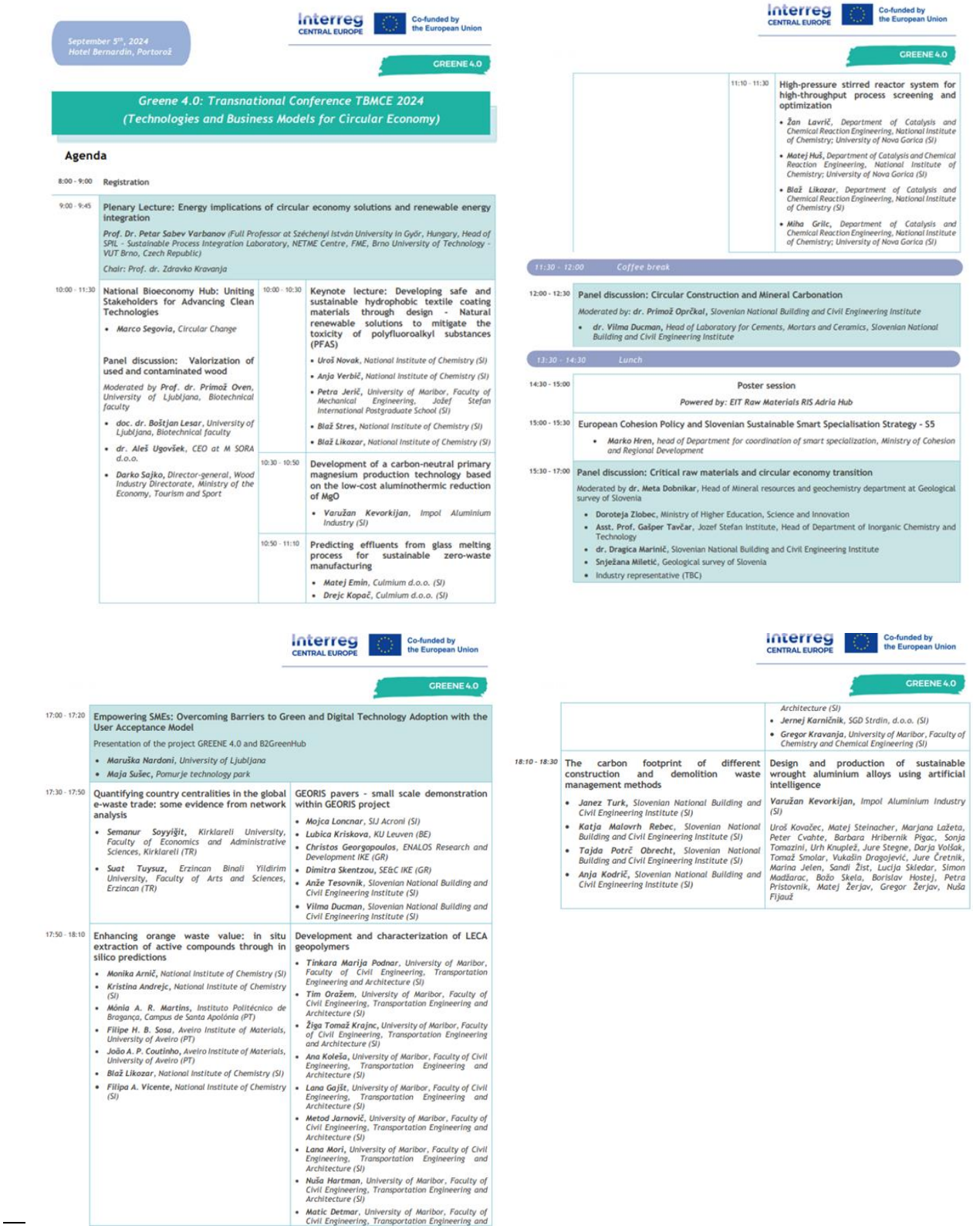
Agenda

The TBMCE 2024 event centred on the circular economy, creating a strong synergy with the goals of Greene 4.0. As part of its mission to provide relevant and engaging content for Slovenian and European companies and stakeholders, Greene 4.0 partners, particularly the lead partner (LP) Pomurje Technology Park, played a pivotal role in co-organizing the entire conference (collaborating with the Faculty of Chemistry and Chemical Engineering of the University of Maribor and the Strategic Research and Innovation Partnership – SRIP Circular economy. This included a careful preparation of the agenda, from selecting speakers to curating the range of topics, ensuring that the event delivered maximum value.

Thanks to these efforts, a diverse and comprehensive program was developed, covering key topics such as renewable energy, bioeconomy, renewable materials, and zero-waste manufacturing. The sessions also addressed optimization techniques applicable to multiple sectors, both within manufacturing and beyond.

In addition to these sessions, the event was enriched by a Poster Session where academic representatives presented their research, and a panel discussion that brought together policymakers, researchers, and industry leaders. Greene 4.0's active participation included presentations by experts from the University of Ljubljana and Pomurje Technology Park. These speakers introduced the B2GreenHub, a support environment for companies focused on green and digital transitions, and provided insights into the User Acceptance Model.

Further topics explored during the event included electronic and biological waste management, as well as sustainable construction materials. The event concluded with stimulating discussions on key circular economy issues, providing all participants with valuable insights and practical takeaways to drive forward sustainable practices.



September 5th, 2024
Hotel Bernardin, Portorož

Greene 4.0: Transnational Conference TBMCE 2024
(Technologies and Business Models for Circular Economy)

Agenda

8:00 - 9:00 Registration

9:00 - 9:45 **Plenary Lecture: Energy implications of circular economy solutions and renewable energy integration**

Prof. Dr. Petar Sabev Varbanov (Full Professor at Széchenyi István University in Győr, Hungary, Head of SPIL - Sustainable Process Integration Laboratory, NETME Centre, FME, Brno University of Technology - VUT Brno, Czech Republic)

Chair: Prof. dr. Zdravko Kravanja

10:00 - 11:30 **National Bioeconomy Hub: Uniting Stakeholders for Advancing Clean Technologies**

- *Marco Segovia, Circular Change*

Panel discussion: Valorization of used and contaminated wood

Moderated by Prof. dr. Primož Oven, University of Ljubljana, Biotechnical faculty

- *doc. dr. Boštjan Lesar, University of Ljubljana, Biotechnical faculty*
- *dr. Aleš Ugovšek, CEO at M SORA d.o.o.*
- *Darko Sajko, Director-general, Wood Industry Directorate, Ministry of the Economy, Tourism and Sport*

10:00 - 10:30 **Keynote lecture: Developing safe and sustainable hydrophobic textile coating materials through design - Natural renewable solutions to mitigate the toxicity of polyfluoroalkyl substances (PFAS)**

- *Uroš Novak, National Institute of Chemistry (SI)*
- *Anja Verbič, National Institute of Chemistry (SI)*
- *Petra Jerič, University of Maribor, Faculty of Mechanical Engineering, Jožef Stefan International Postgraduate School (SI)*
- *Blaž Stres, National Institute of Chemistry (SI)*
- *Blaž Likozar, National Institute of Chemistry (SI)*

10:30 - 10:50 **Development of a carbon-neutral primary magnesium production technology based on the low-cost aluminothermic reduction of MgO**

- *Varužan Kevorkijan, Impol Aluminium Industry (SI)*

10:50 - 11:10 **Predicting effluents from glass melting process for sustainable zero-waste manufacturing**

- *Matej Emin, Culmium d.o.o. (SI)*
- *Drejc Kopač, Culmium d.o.o. (SI)*

11:10 - 11:30 **High-pressure stirred reactor system for high-throughput process screening and optimization**

- *Žan Lavrič, Department of Catalysis and Chemical Reaction Engineering, National Institute of Chemistry; University of Nova Gorica (SI)*
- *Matej Huš, Department of Catalysis and Chemical Reaction Engineering, National Institute of Chemistry; University of Nova Gorica (SI)*
- *Blaž Likozar, Department of Catalysis and Chemical Reaction Engineering, National Institute of Chemistry (SI)*
- *Miha Grilc, Department of Catalysis and Chemical Reaction Engineering, National Institute of Chemistry; University of Nova Gorica (SI)*

11:30 - 12:00 *Coffee break*

12:00 - 12:30 **Panel discussion: Circular Construction and Mineral Carbonation**

Moderated by: dr. Primož Oprčkal, Slovenian National Building and Civil Engineering Institute

- *dr. Vilma Ducman, Head of Laboratory for Cements, Mortars and Ceramics, Slovenian National Building and Civil Engineering Institute*

13:30 - 14:30 *Lunch*

14:30 - 15:00 **Poster session**

Powered by: EIT Raw Materials RIS Adria Hub

15:00 - 15:30 **European Cohesion Policy and Slovenian Sustainable Smart Specialisation Strategy - S5**

- *Marko Hren, head of Department for coordination of smart specialization, Ministry of Cohesion and Regional Development*

15:30 - 17:00 **Panel discussion: Critical raw materials and circular economy transition**

Moderated by dr. Meta Dobnikar, Head of Mineral resources and geochemistry department at Geological survey of Slovenia

- Doroteja Zlobec, Ministry of Higher Education, Science and Innovation
- Asst. Prof. Gašper Tavčar, Jozef Stefan Institute, Head of Department of Inorganic Chemistry and Technology
- dr. Dragica Marinič, Slovenian National Building and Civil Engineering Institute
- Snježana Miletić, Geological survey of Slovenia
- Industry representative (TBC)

17:00 - 17:20 **Empowering SMEs: Overcoming Barriers to Green and Digital Technology Adoption with the User Acceptance Model**

Presentation of the project GREENE 4.0 and B2GreenHub

- *Maruška Nardoni, University of Ljubljana*
- *Maja Sušec, Pomurje technology park*

17:30 - 17:50 **Quantifying country centralities in the global e-waste trade: some evidence from network analysis**

- *Semanur Soyyiğit, Kirklareli University, Faculty of Economics and Administrative Sciences, Kirklareli (TR)*
- *Suat Tuysuz, Erzincan Binali Yildirim University, Faculty of Arts and Sciences, Erzincan (TR)*

GEORIS pavers - small scale demonstration within GEORIS project

- *Mojca Loncnar, SIJ Acroni (SI)*
- *Lubica Kriskova, KU Leuven (BE)*
- *Christos Georgopoulos, ENALOS Research and Development IKE (GR)*
- *Dimitra Skentzou, SEAC IKE (GR)*
- *Anže Tesovnik, Slovenian National Building and Civil Engineering Institute (SI)*
- *Vilma Ducman, Slovenian National Building and Civil Engineering Institute (SI)*

17:50 - 18:10 **Enhancing orange waste value: in situ extraction of active compounds through in silico predictions**

- *Monika Arnič, National Institute of Chemistry (SI)*
- *Kristina Andrejc, National Institute of Chemistry (SI)*
- *Mónia A. R. Martins, Instituto Politécnico de Bragança, Campus de Santa Apolónia (PT)*
- *Filipe H. B. Sosa, Aveiro Institute of Materials, University of Aveiro (PT)*
- *João A. P. Coutinho, Aveiro Institute of Materials, University of Aveiro (PT)*
- *Blaž Likozar, National Institute of Chemistry (SI)*
- *Filipa A. Vicente, National Institute of Chemistry (SI)*

Development and characterization of LECA geopolymers

- *Tinkara Marija Podnar, University of Maribor, Faculty of Civil Engineering, Transportation Engineering and Architecture (SI)*
- *Tim Oražem, University of Maribor, Faculty of Civil Engineering, Transportation Engineering and Architecture (SI)*
- *Žiga Tomaž Krajnc, University of Maribor, Faculty of Civil Engineering, Transportation Engineering and Architecture (SI)*
- *Ana Koleša, University of Maribor, Faculty of Civil Engineering, Transportation Engineering and Architecture (SI)*
- *Lana Gajšt, University of Maribor, Faculty of Civil Engineering, Transportation Engineering and Architecture (SI)*
- *Metod Jarnovič, University of Maribor, Faculty of Civil Engineering, Transportation Engineering and Architecture (SI)*
- *Lana Mori, University of Maribor, Faculty of Civil Engineering, Transportation Engineering and Architecture (SI)*
- *Nuša Hartman, University of Maribor, Faculty of Civil Engineering, Transportation Engineering and Architecture (SI)*
- *Matic Detmar, University of Maribor, Faculty of Civil Engineering, Transportation Engineering and Architecture (SI)*
- *Jernej Karničnik, SGD Strdin, d.o.o. (SI)*
- *Gregor Kravanja, University of Maribor, Faculty of Chemistry and Chemical Engineering (SI)*

18:10 - 18:30 **The carbon footprint of different construction and demolition waste management methods**

- *Janez Turk, Slovenian National Building and Civil Engineering Institute (SI)*
- *Katja Malovrh Rebec, Slovenian National Building and Civil Engineering Institute (SI)*
- *Tajda Potrč Obrecht, Slovenian National Building and Civil Engineering Institute (SI)*
- *Anja Kodrič, Slovenian National Building and Civil Engineering Institute (SI)*

Design and production of sustainable wrought aluminium alloys using artificial intelligence

Varužan Kevorkijan, Impol Aluminium Industry (SI)

Uroš Kovačec, Matej Steinacher, Marjana Lažeta, Peter Cvahte, Barbara Hribernik Pigac, Sonja Tomazini, Urh Knuplež, Jure Stegne, Darja Volšak, Tomaž Smolar, Vukašin Dragojević, Jure Čretnik, Marina Jelen, Sandi Žist, Lucija Skledar, Simon Maždarac, Božo Skela, Borislav Hostej, Petra Pristovnik, Matej Žerjav, Gregor Žerjav, Nuša Fijauž

Figure 1: Event Agenda

D. Impact

Attendance

The TBMCE 2024 event is an international event which brought together 153 participants. Of the 153 participants, 150 were present on-site and 3 online. The participants were representatives of academia, supporting institutions, companies, and policy makers. All had an opportunity to partake in the Greene 4.0 Transnational Conference which took place on the second day of the TBMCE 2024.

Media Coverage

A.1 Social Media

The event announcements were promoted via social media. Pomurje Technology Park promoted the Transnational Conference live, during the event (LinkedIn, Facebook), and disseminated it after its execution on Pomurje Technology Park's social media (LinkedIn and Facebook), and on the B2GreenHub social media pages (LinkedIn and Facebook). The Transnational Conference was also disseminated on the Greene 4.0 official LinkedIn page by the responsible partner Krakow Technology Park. Additional posts were made by project partners. All posts and their impact, including number of impressions, number of reactions, and engagement rate, are included in tables below – Table 1 for LinkedIn and Table 2 for Facebook.

LinkedIn	Organization	Number of Impressions	Number of Reactions	Engagement Rate (%)
Event announcement (04.09.2024)	Greene 4.0 LinkedIn page	410	17	7,56
Event announcement (27.08.2024)	PTP	182	6	4,4
Live event coverage (05.09.2024)	PTP	1514	61	16,45
Post-event dissemination (12.09.2024)	Greene 4.0 LinkedIn page	755	23	19,47
Post-event dissemination (12.09.2024)	B2GreenHub	410	20	32,44
Post-event dissemination (11.09.2024)	PTP	579	25	48,19
Post-event	MGFÜ	453	13	25,17

dissemination (16.09.2024)				
Post-event dissemination (11.09.2024)	FHKU (post by researcher)	869	31	/
Post-event dissemination (26.09.2024)	UJEP	198	14	21,21

Table 1: Greene 4.0 Transnational Conference LinkedIn Impact

Facebook	Organization	Number of Impressions	Number of Reactions	Reach
Live event coverage (05.09.2024)	PTP	341	4	327
Post-event dissemination (11.09.2024)	PTP	183	6	172
Post-event dissemination (12.09.2024)	B2GreenHub	268	7	245
Post-event dissemination (16.09.2024)	MGFÜ	This was a shared post – no insights available		

Table 2: Greene 4.0 Transnational Conference Facebook Impact

The data in Table 1 shows that the project's communication efforts have had a substantial impact, particularly in terms of post-event engagement, demonstrating that our audience is highly engaged and responsive to the content we've shared. The data shows that post-event dissemination posts consistently outperformed the event announcements, with engagement rates reaching as high as 48.19% (PTP on 11.09.2024). This clearly indicates that the content we provided after the event resonated deeply with the audience. Engagement rates above 25%, as seen in multiple post-event posts, are above typical engagement rates on LinkedIn, which range from 2-3 % for most industries[1]. These figures show that our posts not only reached people but effectively engaged them, leading to meaningful interactions with the content.

The high engagement rates on LinkedIn are a strong indicator that our communication strategy for the Transnational Conference as well as the event itself was effective in generating interest, interaction, and a positive response from the LinkedIn audience. This demonstrates the project's strong influence and lasting impact on the community, effectively amplifying its message across platforms and stakeholders.

Furthermore, the data in Table 2 indicates that the project's presence on Facebook made a meaningful impact in terms of visibility and engagement, particularly with the event-related posts. While Facebook generally sees lower engagement rates compared to other platforms, the project made a significant impact, particularly through live event coverage and post-event dissemination. The posts have reached

[1] Sources: Socialinsider; LinkedIn

hundreds of users, with meaningful engagement, especially in the post-event phase. This suggests that our Facebook strategy successfully keeps the conversation going after the event, ensuring sustained visibility and interaction with the project. For future communication efforts, continuing to emphasize post-event insights and follow-ups on Facebook will likely yield the most engagement.

To sum up, the high engagement rates on LinkedIn and the meaningful reach on Facebook demonstrate that the Transnational Conference was highly effective in generating interest, interaction, and visibility across both platforms. While LinkedIn saw particularly strong engagement, Facebook effectively maintained audience interaction through live coverage and post-event dissemination, ensuring the project's sustained impact. Focusing on post-event content across both platforms will continue to amplify the project's message and maintain audience engagement.

A.2 News Articles

The Transnational Conference received extensive dissemination through various platforms, primarily the official Greene 4.0 project webpage, which featured both an event announcement and post-event dissemination.

In addition, local news coverage was provided by Pomurec.com, a well-established online media platform, primarily serving the Pomurje region. It offers a wide range of content, including news, culture, sports, and event coverage, and has a strong focus on local and regional topics. The portal plays an essential role in connecting the local community with relevant updates and information, often covering issues that may not receive national attention.

Project partners also contributed to the dissemination efforts. Pomurje Technology Park provided both an event annoucement and post-event dissemination news on their website, while FH Kufstein Tirol shared website post-event dissemination news and so did UJEP – post-event dissemination.

Additionally, the event announcement was featured in the first Greene 4.0 newsletter which has gained 83 subscribers. As of September 30, 2024, the article covering the Transnational Conference had been viewed 74 times.

Furthermore, the TBMCE 2024 event was highlighted extensively by SRIP – Circular Economy (LinkedIn and website), as well as the Faculty of Chemistry and Chemical Engineering Maribor (LinkedIn). Given the scientific nature of the event, the Book of Abstracts from the conference is available online, and select presentations from the conference have been uploaded to YouTube, further extending the reach of the event and its findings.

E. Conclusion

The Greene 4.0 Transnational Conference successfully fulfilled its objectives of disseminating vital research outputs, particularly the User Acceptance Model, and fostering collaboration among key stakeholders in the realm of green and digital transitions. By bringing together a diverse group of participants, including industry leaders, researchers, and policymakers, the conference facilitated valuable discussions on pressing topics related to the circular economy, renewable energy, and sustainable manufacturing practices.

A major achievement of the conference was the establishment of connections with 10 institutions dedicated to the green transition. Collaborations were formed, and several of these institutions expressed interest in joining the B2GreenHub initiative. Additionally, manufacturing companies that attended the event expressed interest in participating in Greene 4.0 pilot actions. We also identified numerous solution providers and introduced the B2GreenHub to a broader international audience, demonstrating our role as facilitators dedicated to connecting key players in the green transition.

The event's comprehensive agenda, enriched by presentations, panel discussions, and a Poster Session, highlighted the importance of innovative solutions for a sustainable transition.

The extensive media coverage across various platforms, including social media, local news outlets, and the official Greene 4.0 webpage, underscores the conference's impact and the effectiveness of its communication strategy. The high engagement levels achieved on platforms like LinkedIn and Facebook reflect a sustained interest in the topics discussed and the commitment to ongoing dialogue in the sustainability space.

As we move forward, it is essential to build on the momentum generated by the conference. Continued efforts in disseminating post-event content, engaging with stakeholders, and promoting the initiatives introduced will ensure that the Greene 4.0 project remains at the forefront of supporting sustainable practices in Europe. Through these actions, we can further amplify our message and drive meaningful change in the manufacturing sector and beyond.

Overall, the conference was an overwhelming success, showcasing our role as facilitators committed to supporting sustainable transitions through innovation and collaboration.