GEMSTONE

Green Manufacturing Supporting Recovery and Resilience of Industrial SMEs

Funded by the European Union

D2.3 Reports of the raising awareness activities

"Organisation of a joint European cycle of awareness-raising and mobilization workshops"

Organisation of a joint European cycle of awareness-raising and mobilization workshops

Goal: Inspiring small and medium-sized enterprises, project partners as well as other stakeholders for a better understanding of Green Manufacturing practices and their implementation -

By providing examples, good stories, opportunities and new business models, which not only expand the knowledge of the basic principles of the green transition, but also give insight into both the circular economy, as well as in ensuring sustainability, improvements to supply chains and the contribution of product life cycle analysis etc.

The organisation of a joint European cycle of awareness-raising and mobilization workshops are developed from expressed needs and challenges identified by the Project methodology intended to mobilize industrial ecosystems on the topics of Green Manufacturing. The project aims to raise awareness within industrial ecosystems where project partners deliver a series of activities - such as workshops, webinars, and conferences - focused on the concepts and approaches of Green Manufacturing.

Awareness-raising activities

In the period of the project partners organised regional and European level workshops. Information about international workshops is publicly available and open to any interested and is shared on project`s website as well as on social media accounts. European level workshops are available on project YouTube account (@GEMSTONEProject).

Target (key performance indicators)

No. of raising-awareness workshops organised: **15**
No. of participants: **300**

Reached

No. of raising-awareness European level workshops organised: **8**
No. of raising-awareness regional level workshops organised: **11**
Total: 19
No. of participants: **403**

EUROPEAN LEVEL WORKSHOPS

From April 2023 till May 2025, a total of eight European-level workshops were organized, forming a cornerstone of the GEMSTONE project's effort to advance green manufacturing across borders. These online events focused on key themes such as circular economy, eco-design, life cycle engineering, green jobs, and the integration of recycled materials.

Trends observed included growing interest in servitization models, life cycle impact methodologies, and lean-green manufacturing strategies. Each workshop contributed to strengthening a joint European cycle of awareness-raising by equipping SMEs and stakeholders with tools, best practices, and funding insights to actively engage in the green transition, thereby aligning industrial innovation with EU sustainability goals.

Organiser	**POOL-NET**
Type of activity	Online webinar
Name of activity	Sustainable Challenges on Industry Competitiveness
Description of the workshop	This webinar included topics like the challenges and needs for Sustainability, the concept of Sustainability, evolution in Business (from a shareholder value to a system value vision) and in Value Chains with examples and critical factors for sustainability in value chains, data availability for LCA (Life cycle Assessment) and aspects of plastic injection molded parts. Agenda: 1. The challenges and the need for sustainability; 2. Concept of sustainability; 3. Critical factors for sustainability in value chains.
Place/ format	Online

Funded by the European Union

Date and time	28/04/2023 (5:00 p.m-6:00 p.m; PT Hour)
Speakers	Rui Tocha (POOL-NET) /Manuel Laranja (ISEG – Lisbon School of Economics & Management)
Agenda	05:00 – Welcome speech and introductions 05:15 – Sustainable challenges on industry competitiveness 05:40 – Q&A 06:00 - Closure
Target group	SME`S/ business partners/ Innovators
Participants	13
Principles of Green manufacturing included in workshop	Green manufacturing challenges (e.g. combat climate change, conserve ecosystems, and promote a circular economy) and International framework regulations (Green deal; Paris Agreement; Agenda 2030) Management sustainability in value chains is crucial for ensuring long-term environmental, social, and economic viability, namely involves understanding and managing greenhouse gas emissions across a company´s entire value chain and might differ across sectors. Greenhouse gas emissions are classified into three scopes. Scope 1 (direct emissions that an organisation emits during the production from sources it owns or controls directly). emissions from a manufacturing); Scope 2 (indirect emissions, deriving from an organization's purchase (upstream) of electricity, steam, heat, or cooling.); Scope 3 (all other indirect emissions that occur in the value chain, including both upstream and downstream activities.) Some critical factors for sustainability in industrial value chains to consider: adopt as a starting point the regulations and normative of certifications (ISO related environment (ISO 14000 family) and energy (ISO 50001) management and social responsibility (26000); resource-efficient (reduce materials unsustainable); process efficiency (cleaner production processes, adopt renewal energy and heat technologies), migrate from linear business to circular businesses; product design (eco-design): 80% of product´s environment impacts throughout the life cycle are determined at design stage; improve social aspects of the business and value chain.
Training Material package, presentations or video	https://www.youtube.com/watch?v=xs3DLcFBNxI&list=PLXtfPeotiO-yYBc1_h1M6Exkjdx_mNurj
Training material package, presentations	NA

Organiser	**POOL-NET**
Type of activity	Online webinar
Name of activity	Green Manufacturing: New Boarders for Industry
Description of the workshop	This webinar providing a better understanding of green manufacturing as a major driver for industrial competitiveness and it contributes to rethink manufacturing and its supply chain. A particular emphasis was given to Lean-Green manufacturing, as a new way of system´s thinking manufacturing, that combines the principles of lean production (lean thinking) with green dimension (maximum productivity in the use of natural resources with the minimum environmental impact). It identifies and measures environmental aspects and impacts (inputs and outputs), based on manufacturing value streams and the real flow

Funded by the European Union

	of value. As well as focus on green practices, gave examples of tools to evaluate, measure and reduce environment impacts.
Place/ format	Online
Date and time	19/05/2023 (9:00 a.m-10:00 a.m. PT Hour)
Speakers	Rui Tocha (POOL-NET) /Elsa Henriques (IST – Higher Technical Engineering Institute of Lisbon University)
Agenda	09:00 – Welcome speech and introductions 09:15 – Green Manufacturing: New Boarders for Industry 09:40 – Q&A 10:00 - Closure
Target group	SME`S/ business partners/ Innovators
Participants	16
Principles of Green manufacturing included in workshop	Sustainable manufacturing: requires a holistic approach that integrates economic, environmental and social dimensions, that are interdependent, at every stage of its value chain. Lean-green manufacturing: adopt principles/process of lean production (focused on customers' demand) and green practices (focused on reducing the business' environmental impact) into lean green manufacturing (e.g. value stream mapping technique, focus not only on client's needs, but also preserving the environment, calculate the global impact, considering all inputs and all outputs)
Training Material package, presentations or video	https://youtu.be/6hGAlQFM4tY?feature=shared
Training material package, presentations	NA

Organiser	**POOL-NET**
Type of activity	Online webinar
Name of activity	Green Manufacturing: Cases in Engineering Design for Sustainability
Description of the workshop	This webinar focused on life cycle engineering, as a sustainability-oriented engineering principle based on the enlargement of the design scope from product concept to the design of all its life stages. To better understand this concept, it was also presented a real case study: Life cycle Engineering methodology applied to material selection. This case analyses the requirements and characteristics for an automobile front fender and selected different candidates materials and compare their performance across technological, environmental, and economic dimensions throughout the product's life cycle (3 potential materials from 6 candidates materials are chosen as the best ones). It ensures that the chosen material meets the functional requirements and environmental impact and is cost-effective over the product´s entire lifespan. The "best materials domains" were presented in a ternary diagram allowing the design team to select the "best material", according to their practice and corporate strategy,
Place/ format	Online
Date and time	28/06/2023 (03:00 p.m-04:00 p.m. PT Hour)
Speakers	Cristina Soares (POOL-NET)/Elsa Henriques (IST – Higher Technical Engineering Institute of Lisbon University)
Agenda	03:00 – Welcome speech and introductions 03:15 – Green Manufacturing: Cases in Engineering Design for Sustainability 03:40 – Q&A 04:00 - Closure
Target group	SME`S/ business partners/ Innovators

Funded by the European Union

Participants	14
Principles of Green manufacturing included in workshop	Sustainable product design: material selection is part of product design, decisions taken during this stage largely influence the product's costs and environmental impacts for its entire life cycle. Life cycle analysis. The Life cycle engineering (LCE) approach is proposed to support material selection, integrating the performance of the material for the specific application in technological, environmental and economical dimensions throughout the duration of the product. This analysis includes LCA (life cycle assessment) and LCC (life cycle cost).
Training Material package, presentations or video	https://youtu.be/6mgN8X1YuXM?feature=shared
Training material package, presentations	NA

Organiser	**POOL-NET**
Type of activity	Workshop
Name of activity	Circular Economy: Funding and Training Event
Description of the workshop	Transitioning to green manufacturing requires substantial upfront investments in new technologies, energy-efficient equipment, and sustainable raw materials. This webinar aimed at companies (special SMEs) with potential interest in obtaining financing, and training, for the implementation of projects within the scope of the circular economy. The event was promoted by POOL-NET and CENTIMFE, in partnership with CCDRC - Regional Coordination and Development Commission – Centre of Portugal, with a presentation of different ongoing projects that offer opportunities for cascade funding and free training for companies in the manufacturing industry, namely: -Deremco - De-and Remanufacturing for Circular Economy Investments in the Composite Industry (Programme I3 Instrument). The objective of DeremCo is the development and large-scale demonstration of a cross-sectorial circular value-chain for the recovery and re-use of composites into high added value products. - GEMSTONE - GrEen Manufacturing SupporTing recovery and resiliency of industrial SMEs. (Programme: Euroclusters). GEMSTONE has the ambition of mobilizing manufacturing companies, innovative SMEs, on the challenges of “Green manufacturing” by developing a dedicated joint service offer and operational and financial support tools around the 3 pillars: “Train, Innovate and Explore”. - POLREC- Supporting a green and resilient Europe through POLymer RECycling (SMP-COSME-2021-CLUSTER). The main objective is to support the European industry to switch practices from polymers waste landfilling and burning towards polymer recycling (mechanical or chemical) into raw materials (monomer, polymer and additive) - CIRCVET - Circular Economy Practical Training Materials for Plastic Manufacturing Industries (Programme: ERASMUS+). - STEP2LAB - Systematic Transition from Prison into the Labour Market (Programme: ERASMUS+). The project’s objective is to support these industry actors in creating effective and collaborative social and labour reintegration roadmaps for incarcerated individuals.
Place/ format	Presence + Online

Funded by the European Union

Date and time	21/03/2024 (9:30 a.m-01:00 p.m. PT Hour)
Speakers	Alexandra Rodrigues/Rui Tocha/ Marcello Colledani/Andrea di Anselmo/Cristina Soares/Tânia Mendes/Rui Soares/Liliana Ramos
Agenda	Agenda: 09:30 Public Event-Welcoming and Opening (CCDRC) 09:40 Clusters' Speeches (POOL-NET) 09:55 I3 and DeremCo- Presentation of the Project. Introduction on Objectives and Mission. Demo Cases (Politecnico di Milano) 10:25 Presentation of the Open Calls Process. Explanation of Application Procedure (META GROUP) Q&A session 11:00 Coffee break & Networking 11:30 Gemstone Project - Presentation of the Open Calls (POOL-NET) 11:45 POLREC Project - Presentation of the Open Call (CENTIMFE) 12:00 CIRCVET - Presentation of the Project- Training Course Presentation-the piloting phase (CENTIMFE) 13:00 STEP2LAB - Presentation and overview (CENTIMFE)
Target group	SME`S/ business partners/ Innovators
Participants	75
Principles of Green manufacturing included in workshop	- Circular economy, trough the remanufacturing and reuse materials, can significantly reduce waste and environmental impact while promoting resource efficiency. This approach conserves natural resources but also drives innovation in product design and manufacturing processes. - Waste management is central to green and sustainable manufacturing, but it also supports the principles of the circular economy. Promoting recycling, reusing materials, and reducing landfill waste instead of disposing materials, manufacturers can implement closed-loop systems that allow waste to be reused or recycled back into production. - The adoption of cleaner technologies by industries can achieve greater sustainability and efficiency, namely additive manufacturing solution to process recycled granules from many sectors and for many applications. - Waste reduction example: switch practices from polymers waste landfilling and burning towards polymer recycling (mechanical or chemical) into raw materials (monomer, polymer and additive). - Sustainable materials. Example. Fiber-Reinforced Plastics (FRPs) are widely adopted in several massively used products in electronics, sport equipment, medical equipment, automotive, construction, wind energy, aeronautics and marine industries, due to their better lightweight and corrosion resistance compared to metals.
Training Material package, presentations or video	https://youtu.be/rq2Gq2kYCVY?feature=shared
Training material package, presentations	NA

Organiser	**POOL-NET**
Type of activity	Online webinar
Name of activity	New Business Models to Foster Circular Economy
Description of the workshop	This webinar aims to address strategies and models for the industry to adopt a circular economy model. It presented the CIRCO methodology overview (Creating business through circular design), developed by the

Funded by the European Union

	Technical University of Delft, that incentives circular economy through design, promoting innovation and sustainability. This methodology outlines five circular business models archetypes from product-oriented to service-oriented approaches (1. Classic long life (product life extension); 2. Hybrid; 3. Gap exploiter: Repair Service; Second hand; Recovery; 4. Access; 5. Performance) and six circular design strategies (Attachment and Trust; Upgradability and adaptability; Disassembly or reassembly; Standardization and compatibility; Ease of maintenance and repair; Durability). Examples were given of different business models and strategies, On the other hand, this session had a special focus on "servitization" (or Product-as-a-Service), fundamentally challenges traditional economic models, where they focus on providing services rather than products.
Place/ format	Online
Date and time	17/04/2024 (03:00 p.m-04:00 p.m.PT hour)
Speakers	Rui Tocha/David Camocho/Nicolas Frango
Agenda	Agenda: 15:00 Welcome speech and introduction (Rui Tocha, Pool-Net) 15:10 New business models through circular design. The Circo methodology (David Camocho, PhD in Design |Design for Sustainability and Circular Economy, LNEG National Energy and Geology Laboratory) 15:30. How servitization questions traditional economic models by mobilizing the circular economy (Nicolas Frango/CIRRID-International Centre of resource and innovation for sustainable development) 15:50 Q&A 16:00 Closure
Target group	SME`S/ business partners/ Innovators
Participants	29
Principles of Green manufacturing included in workshop	Circular economy: products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling and composting. The circular economy implies thinking about new business models that reduce the use of resources, limit pollution and waste production. Examples of the model called "Product as a Service" aims to have the customer buy a service for a limited period, while the supplier retains ownership of the product and has an incentive to maintain, service, improve and transform it at the end of its use. In this sense, servitization mobilizes the circular economy and contributes to the green manufacturing through the reduction of raw materials, minimise waste, extending Product Lifecycles, encourages resource recovery, achieve economic and environmental benefits.
Training Material package, presentations or video	https://youtu.be/BC6MrflyeJ4?feature=shared
Training material package, presentations	NA

Organiser	**POOL-NET**
Type of activity	Online webinar
Name of activity	Green Manufacturing: European Programmes
Description of the workshop	This webinar identified the opportunities on green manufacturing to support manufacturing companies on green transition, as well as disseminated European initiatives (e.g. GEMSTONE, EFFRA – European Factories of the Future Research Association, etc, ...) that reinforces

Funded by the European Union

	industry´s global position in terms of innovation and sustainability. So, it was introduced GEMSTONE project and Open Calls for funding; After that it was presented an overview of EFFRA and its role in European Manufacturing, particularly under "Made in Europe Initiative (MiE), future opportunities in circular and green manufacturing stressed of energy efficiency and the retention of value in products; It was presented recent projects in digital manufacturing and circular economy (e.g DigiPrime initiative, which aimed at promoting circular economy practices in manufacturing. It was noted also the significance of digital technologies, particularly digital twins and AI, in improving energy efficiency and facilitating the development of digital product passports, open calls and collaboration in manufacturing. The discussion also touched on the need for flexible disassembly equipment and the integration of various technologies to support circular value chains. CENTIMFE´s presented services support for manufacturing at European level, namely certifications, partnerships and outlined CENTIMFE´s mission to enhance innovation and competitiveness in industry through R&D services and technical expertise, mentioning their involvement in several European projects.
Place/ format	Online
Date and time	23/10/2024 (2:30 p.m-3:30 p.m. PT hour)
Speakers	Rui Tocha/ Chris Decubber/Liliana Ramos
Agenda	Agenda: 14:30 Welcome speech and introduction (Rui Tocha, Pool-Net); 14:40 Programme and calls on Green Manufacturing (Made in Europe) (Chris Decubber, Consultant of EFFRA- European Factories of the Future Research) 15:10. Support action to Manufacturing at the European Level (Liliana Ramos, Project Coordinator at CENTIMFE- Technological Center for the Mouldmaking, Special Tooling and Plastic Industries) 15:30 Questions & Answers 15:40 Closure
Target group	SME`S/ business partners/ Innovators
Participants	32
Training material package, presentations	NA

Organiser	**POOL-NET**
Type of activity	Online webinar
Name of activity	Green jobs & Emergent Talent
Description of the workshop	This webinar aimed to identify which skills European industry needs to overcome the challenges of Green Manufacturing, as well as models for developing and anticipating training and skills for a greener future (e.g Future Skills Factory), It was focused on the critical intersection of green jobs and emergent talent, emphasizing the urgent need for green skills in the context of climate change and sustainability, to mitigate skill shortage (that affected the core of the implementation of the green agenda) and skill gaps in general, and in particular in green skills.
Place/ format	Online
Date and time	29/05/2025 (2:00 p.m-3:00 p.m; PT Hour)
Speakers	Rui Tocha (POOL-NET) /Fátima Suleman (ISCTE – Business School, University Institute of Lisbon)

Funded by the European Union

Agenda	02:00 – Welcome speech and introductions 02:10 – Green Jobs & Emergent Talent 02:40 – Q&A 03:00 - Closure
Target group	SME`S/ business partners/ Innovators
Participants	21
Principles of Green manufacturing included in workshop	Green skills (technical and soft skills and values) are fundamental to green manufacturing, namely technical skills (graduate or not graduate), which focuses on creating products and processes that are environmentally sustainable (with low resources): Energy Efficiency; Sustainable Raw Materials; Waste Reduction; Sustainable Product Design; Supply Chain Sustainability, etc.. The great issue is about technical skills (related the emergent technologies), but also the value of commitment. This raises the question of how the different stakeholders are trying to build up and update information about the required skills and about the skill shortage in a specific industry, occupation, country or region. In this context, it was emphasized the importance of the brokers and partnerships (multi-stakeholder), those can help to build bridge between the business and the education/training systems. It is also important to supply vocational training more attractive.
Training Material package, presentations or video	https://www.youtube.com/watch?v=9bHBHssnwAg
Training material package, presentations	NA

Organiser	**POOL-NET**
Type of activity	Online webinar
Name of activity	Sustainability and Integration of Recycled Materials into new products
Description of the workshop	This webinar identified the potential opportunities in the use of recycled materials (e.g. plastic materials) in new products with a view to reducing waste but also conserving natural resources and minimizing environmental impact. It was presented a use case of a Danish company (GENPLAST), a strategic plastic recycling partner, that present two business models (plastic contracting process per Kg or is used in their own production or sold as granules to plastic manufacturers) and showed how they contribute to reduce the footprint of plastic through the transformation of raw materials and waste in raw materials and new products.
Place/ format	Online
Date and time	07/05/2025 (10:00 a.m-11:00 a.m. PT Hour)
Speakers	Rui Tocha (POOL-NET) / Stig Nielsen, (GENPLAST (DK)
Agenda	10:00 – Welcome speech and introductions 10:10 – Sustainability & Integration of Recycled Materials into New products Sustainability 10:45 – Q&A 11:00 - Closure
Target group	SME`S/ business partners/ Innovators
Participants	16
Principles of Green	Integrating recycled materials into new products is a crucial step towards sustainability, but it comes with several challenges, namely

Funded by the European Union

manufacturing included in workshop	economic viability, quality control, production process adaptations (technologies), namely in complex or multi-layered plastics. Multi-material products are a challenge for recycling due to the lack of separation technology and the cost of separation in another and is difficult to sell. By implementing segmentation strategies can create critical mass, the recycling process becomes more efficient and effective, leading to higher quality recycled plastics and better environmental outcomes (material, product and geographic segmentation). It is crucial to integrate this information from the beginning of the process (Design for Recycling) to have a higher impact. Artificial Intelligence is transforming the recycling process in several aspects, namely improves the efficiency and accuracy of recycling operations, through predictive analysis can conclude about patterns in waste generation and recycling, control of required standards for reuse in new products, as well robotic assistance that can increase the speed of recycling operations.
Training Material package, presentations or video	https://www.youtube.com/watch?v=pXvdUIJmv1c
Training material package, presentations	NA

REGIONAL LEVEL WORKSHOPS

Between October 2023 and March 2025, eleven regional-level workshops were held across several European countries, offering localized, hands-on insights into green manufacturing practices and challenges. These sessions highlighted regional policy alignment, showcased industrial eco-design tools like the Brezet wheel, demonstrated circular economy applications in concrete manufacturing, and introduced ESG strategy development.

The dominant trends included integration of local industry cases, emphasis on training offers for upskilling, and direct company engagement through site visits. Together, these regional efforts grounded the European initiative in local realities, reinforcing the broader awareness-raising cycle by translating continental objectives into actionable regional pathways for sustainable industrial transformation.

Organiser	**POOL-NET**
Type of activity	Online webinar
Name of activity	Public Policies for Sustainability in the Central Region
Description of the workshop	This webinar presented the strategic vision for Centre Region 2030, developed with regional stakeholders. It outlines the goals for regional development, emphasizing innovation, sustainability, and social inclusion. It was defined 8 strategic lines, one of them aims to adapt the region to the climate emergency and decarbonization, that is recognized as essential to maintain the competitiveness of this region, also aligned with diversifying innovation dynamics territorially. Based on that, Center's Regional Smart Specialization Strategy (RIS3 do Centro) was defined to overcome challenges in the triple transition (social, digital and green), under the thematic Materials, Tooling and production, space and digital technologies, as well as Climate and Energy domains (for each domain were identified relevant areas). In addition, was mentioned an agenda for promoting the circular economy, as well as presented the Centro 2030 Regional Programme aimed at fostering sustainable and competitive development in the Central Region of Portugal.

Funded by the European Union

Place/ format	Online
Date and time	30/10/2024 (05:00 p.m-06:00 p.m. PT hour)
Speakers	Rui Tocha/Sophie Patrício
Agenda	Agenda: 05:00 Welcome speech and introduction (Rui Tocha, Pool-Net) 05:15 Public Policies for Sustainability in the Central Region (Sophie Patrício, CCDRC- Regional coordination and development commission of the Center) 05:45 Q&A 06:00 Closure
Target group	SME`S/ business partners/ Innovators
Participants	14
Principles of Green manufacturing included in workshop	Promotion of the projects aligned particularly with: - Sustainable Industrial Solutions: involve the development of sustainable and innovative processes, materials, products or systems. This includes efficient use of resources, decarbonization and waste recovery. - Efficient use of resources (such as energy, water and materials) and reduction of environmental impact in production processes and throughout the life cycle of products and systems. - Circular Economy: Implementation of circular economy principles to transform and modernize the region's industrial sectors. This involves recycling, reusing and recovering waste and by-products as secondary raw materials systems in industrial symbiosis, promoting greater productivity of resources and minimizing mass flows to lower levels of the waste hierarchy, such as landfill. - Assessment of the life cycle of products and the sustainability of processes, products and systems as a tool for eco-innovation and a driver of the circular economy, decarbonization and dematerialization. - Digital technologies and/or emergent technologies. The adoption of advanced technologies, such as IoT and automation, to increase efficiency and reduce environmental impact.
Training material package, presentations	NA.

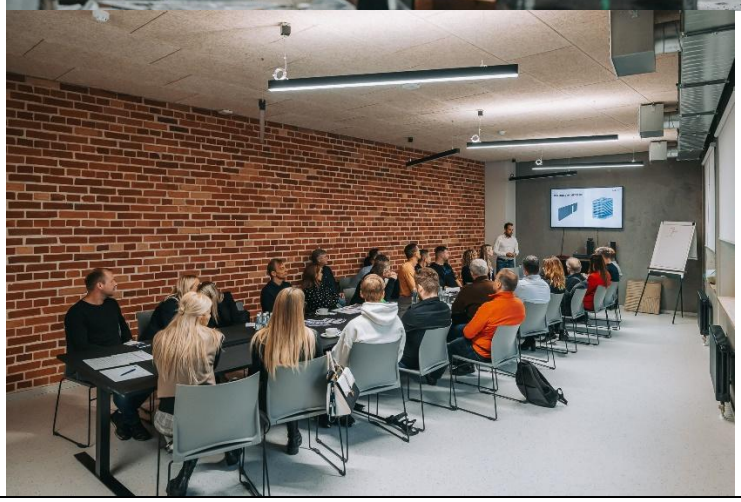
Organiser	**Green and Smart Technology Cluster (GreenTech)**
Type of activity	Seminar
Name of activity	"Green and sustainable manufacturing" within the GEMSTONE project in cooperation with UPB
Description of the workshop	In the seminar "On green and sustainable production", which took place within the framework of the European project "GEMSTONE" at the AS group company UPB production plant of MB Betons,. The participants of the seminar learned about the calls for financial support of the "GEMSTONE" project – explore, train and innovations. And the activities of the UPB group towards more **sustainable production, recycling and reuse of materials in the production process,** and participants also visited the production plant of the UPB group company "Dzelzsbetons MB".
Place and time	Dzelzsbetons MB production facility, 34 Cukura Street, Liepāja, Latvia.
Date and time	11.10.2023 from 11.00 – 13.00.
Speakers	Technical Director of UPB Group Dzelzsbetons MB Arturs Lukasenoks (Artūrs Lukašenoks), PhD
Agenda	11.00 informative part about the project "GEMSTONE" and calls for financial support - for explore, train and innovations (Laura Grundmane, representative of GreenTech).

Funded by the European Union

	11.10 UPB group activities towards more sustainable production, recycling and reuse of materials in the production process (Artūrs Lukašenoks, Dzelzsbetons MB technical director) 12.00 a visit to the production plant of the UPB group company "Dzelzsbetons MB".
Target group	SME`S/ business partners/ Innovators
Participants	25
Report of the event	In order to give entrepreneurs, the opportunity to meet one of the region's leading companies in the field of material production and recycling, the GreenTech seminar was implemented at the company's concrete production location. Thus, ensuring the presence of an industry expert, a presentation and the opportunity to answer the questions of participants. Company is emphasizing the importance of sustainable solutions in the use of more rational resources. A large part of the products made in the "Dzelzsbetons MB" factory also comply with one of the internationally recognized sustainability systems, confirming the high competence of the UPB Group in the field of greener and more sustainable production. The meeting proceeded dynamically, promoting both the exchange of opinions and the discussion about the possibilities of material recycling, alternatives and, above all, the benefits that the company obtains by promoting the green manufacturing. Arturs Lukasenoks shared presentation on reasons why we should think about CO2 reduction and take it seriously, as well showing the carbon reduction potential strategies such as minimisation of waste (prefabricated products, improve construction methods and off-site construction), building efficiency (highly utilise structures, reuse materials, carbon effect materials and products), focusing on clever building, building less or build nothing. Company presented their Net zero roadmap and giving examples of how using reclaimed bricks in precast construction offers multiple benefits, such as unique aesthetics, cost-efficiency of up to 28%, CO2 reduction of up to 30%, and all other precast benefits.
Principles of Green manufacturing included in workshop	The examples mentioned and shared where based on companies' best practices on green manufacturing. Few of the best examples are listed here. Inert Materials Service (IMS) was founded in 2001. IMS provides the production plants of the MB group with the necessary components for the production of ready-mix concrete and reinforced concrete - gravel, sand, pebbles and crushed stone. IMS also carries out environmentally friendly construction debris processing, sorting, secondary circulation of unused construction elements and materials - by transferring reinforcement and metal to scrap metal, and using the rubble for the production of low-grade concrete. The rest is used for backfilling works for the construction of roads and squares. Inert materials service also deals with container rental services. Participants of the seminar also visited The Concrete Research Center (BPC) which is an accredited laboratory that, in accordance with the requirements of the LVS EN ISO/IEC 17025:2017 standard, is competent to perform physical and mechanical testing of mineral materials used in concrete production, hardening concrete. By cooperating with MB Betons group's reinforced concrete and ready-mixed concrete production plants, BPC also develops new products with more sustainable materials and return in cycle existing materials. In order to promote the integration of circular economy business models, the company has established Transportbetons MB, which is the most modern and largest transport concrete network in Latvia with 11 factories and a large specialized vehicle fleet. The factory delivery

Funded by the European Union

	distance is up to 50 km to any object in the country, in addition to that, a mobile production plant is also available, which allows concrete to be produced directly at the construction site on site.
Training material package, presentations	Additional materials where not planned to be provided.
Additional information	 



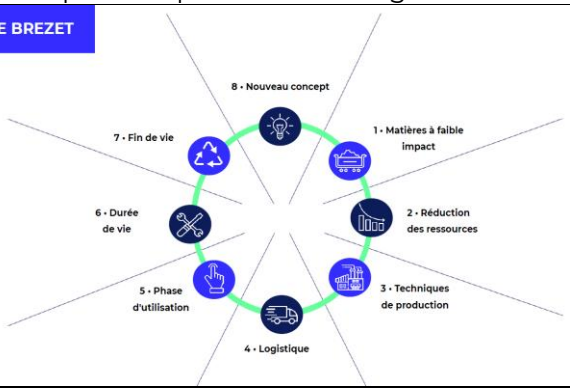
Organiser	**Pole EMC2**
Type of activity	Workshop
Name of activity	Key success factors for eco-design approach
Description of the workshop	This workshop organised by EMC2 focused on eco-design. It gathered industrial companies in order to improve participants' understanding of Eco-design approach and work on identification of challenges to implement it in their company.
Place/ format	On-site
Date and time	19.03.2024 – 14:00-17:00

Funded by the European Union

Speakers	Charles DEVAUX, ENDEMA Angèle GUITTON, HUTISA Yannick Frank, EVEA
Agenda	14h- 14h10 Introduction - ECOPROM, a community 14h10- 14h40 Eco-design – from theory to practice 14h45- 15h30 What barriers in an eco-design approach ? 15h30- 15h45 Break 15h45- 16h45 How to implement success factors ? 17h networking
Target group	SME`S/ business partners/ Innovators
Participants	21
Principles of Green manufacturing included in workshop	Eco-design is one of the levers identified in Gemstone roadmap. In order to give companies opportunity to learn about eco-design approach, the workshop was animated by experts. It was structured with a mix of technical inputs provided by the experts to improve knowledge of participants and interactive sessions, allowing companies to exchange and discuss in groups and formulate questions they may have when considering adoption of eco-design approach in their company.
Training Material package, presentations or video	Additional materials where not planned to be provided.
Training material package, presentations	Additional materials where not planned to be provided.
Additional information	 

Organiser	**Pole EMC2**
Type of activity	Workshop
Name of activity	Take action on all the eco-design axes of the Brezet wheel

Funded by the European Union

Description of the workshop	This second workshop organised by EMC2 focused on eco-design but with a highlight on the Brezet wheel to allow participants to better understand this tool and experiment analysis with study cases.
Place/ format	On-site
Date and time	23.04.2024 – 9h – 13h
Speakers	Charles DEVAUX, ENDEMA Angèle GUITTON, HUTISA Yannick Frank, EVEA
Agenda	9h-9h10 Introduction - ECOPROM, a community 9h10- 9h20 Feedback on workshop 1 9h20- 10h10 Presentation and illustration of Brezet wheel 10h10- 10h25 Break 10h25- 11h05 Workshop on Eco-design 11h05- 11h25 Complementary tools for Eco-design 11h25- 11h55 Workshop on Eco-design (part 2) 11h55- 12h15 Reminder and conclusion 12h15- networking lunch
Target group	SME`S/ business partners/ Innovators
Participants	14
Principles of Green manufacturing included in workshop	This workshop was animated by experts on eco-design and focused on experimentation of the Brezet wheel. Theorical knowledge were provided to participants at the beginning of the workshop in order to explain how this tool is used and its purpose. Examples based on regional industrial initiatives were provided to illustrate. Following the introduction, participants were grouped in order to practice, making an analysis of product production using the tool.
Training Material package, presentations or video	ROUE DE BREZET 
Training material package, presentations	Additional materials where not planned to be provided.
Additional information	

Funded by the European Union

Organiser	**CIMES**
Type of activity	Workshop
Name of activity	Offers in the Auvergne-Rhône-Alpes region to train in eco-design and impact analysis
Description of the workshop	Since the signing of the European green deal in 2020, French legislation has tightened in environmental matters. Article L 229-25 of the Environmental Code notably requires large companies to establish a report on greenhouse gas emissions. This carbon footprint calculation will ultimately impact the entire value chain. In the short term, all companies will be held accountable. Today, regulations emphasize greenhouse gases, but many other indicators are relevant in order to quantify its impact on the environment as closely as possible. These proactive approaches make it possible to better adapt to current societal developments in order to decide on the best business strategies to follow. Despite the urgency and need for training in impact analysis, the training offer remains difficult to detect. This day will allow you to discover the high added value training courses that exist on this topic in the Auvergne-Rhône-Alpes region.
Place/ format	Saint-Etienne, France | Physical event
Date and time	14/05/2024, 9.00am-12.30pm CET
Speakers	Valérie LAFOREST and Audrey TANGUY – Ecole des Mines de Saint-Etienne Rachel DELOLME – Grenoble INP Carole CHARBUILLET – ENSAM Chambéry Sasha CONRAD – Pôle Eco-conception Raphaël BLANC – MAOBI
Agenda	9.00am – Welcome coffee 9.30-11.45am – Training offers from the regional engineering schools 11.45am-12.30pm – Training offers from complementary organisations
Target group	SMEs and manufacturing companies in general
Participants	17 participants
Principles of Green manufacturing included in workshop	The eco-design and impact analysis are two major topics in Green Manufacturing and were defined as such in the Project Roadmap and Strategy. Also, the topic of skills and training was central in the discussions during this workshop. Reskilling and upskilling are necessary to acquire relevant skills useful to implement green manufacturing.
Training Material package,	Each speaker used a proper presentation detailing the specific training offer dedicated to help manufacturing SMEs in eco-design and impact analysis.

Funded by the European Union

presentations or video	
Training material package, presentations	Additional materials were not planned to be provided.
Additional information	Communication materials 

Organiser	**CIMES**
Type of activity	Workshop
Name of activity	Solutions and innovations applied to the manufacturing industry and production goods for a circular economy
Description of the workshop	- As part of its Green Manufacturing cycle, CIMES in partnership with GRENOBLE ALPES METROPOLE invites you to share concrete examples illustrating the circular economy applied to the manufacturing industry and production goods. - The circular economy is one of the pillars of the inevitable green transition to which the industry must respond by reinventing its way of designing, producing, using and promoting while rethinking resource management, the organization of production systems and remuneration models. . - On the program: an exploration of the principles of the circular economy, sectoral case studies and discussions on challenges and opportunities. - Scientific and industrial witnesses will share their vision and propose concrete solutions in order to inspire new initiatives. - This event is an opportunity to exchange ideas, establish partnerships and catalyse actions towards a more circular economy. - It is primarily aimed at industrialists and will also be of interest to academics and institutions.
Place/ format	Grenoble, France | Physical event
Date and time	04/06/2024, 4.00-7.00pm

Funded by the European Union

Speakers	Lionnel DUCHAMPS – Menuiserie Simonetti Jean-Pierre RAMOUL – CMT Bike Peggy ZWOLINSKI – G-SCOP
Agenda	- 3:30 p.m. – 4:00 p.m. WELCOME - 4:00 p.m. – 5:00 p.m. VISIT TO POLE R - 8000m2 space dedicated to the circular economy (donary, 4500m2 platform dedicated to sorting, reuse and repair, anti-waste and deposit center). - 5:00 p.m. – 6:00 p.m. INTERVENTIONS - Round table - 6:00 p.m. – 6:15 p.m. INTERCONNECTION - Come share a moment of conviviality and meet the mechanical and manufacturing players in the Grenoble Alpes basin engaged in the circular economy. We will put together some fun times for you to get to know each other. - 6:15 p.m. – 7:00 p.m. COCKTAIL/NETWORKING
Target group	Manufacturing companies, academic partners, public authorities
Participants	15 participants
Principles of Green manufacturing included in workshop	Circular economy as main principle of green manufacturing was at the core of the discussions during this workshop.
Training Material package, presentations or video	Each speaker used a proper presentation detailing how circular economy can benefit to manufacturing companies.
Training material package, presentations	Additional materials were not planned to be provided.
Additional information	Communication materials 

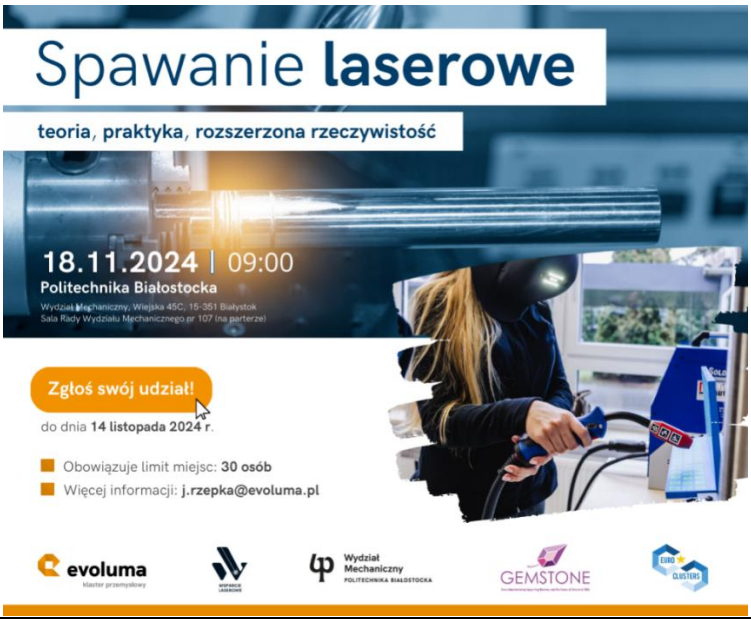
Organiser	**IDPC / Evoluma**
Type of activity	Workshop
Name of activity	Laser Welding Workshops: Basics, Hands-On Practice & AR Training

Funded by the European Union

Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

Description of the workshop	The workshop focused on introducing participants to the fundamentals of laser welding technology, combining theoretical knowledge with practical applications. The event aimed to bridge the gap between traditional and advanced welding methods by showcasing real-world laser welding techniques and incorporating augmented reality (AR) for immersive training. The event began with informative lectures: Janusz Poulakowski discussed clustering and cooperation within the metal industry, highlighting the benefits of industrial partnerships, while representatives from Wsparcie Laserowe provided insights into laser welding technology, including its applications and future potential. Following the presentations, participants had the opportunity to engage in hands-on practice, testing laser welding equipment under expert guidance. The workshop concluded with an AR training session, allowing attendees to experience virtual simulations of laser welding processes.
Place/ format	Białystok University of Technology | Physical event
Date and time	18/11/2024, 10:00 am – 4:00 pm
Speakers	Janusz Poulakowski – Clustering and cooperation in the metal industry Representatives from Wsparcie Laserowe – Laser welding technology
Agenda	10:00 am – 10:30 am WELCOME & INTRODUCTION 10:30 am – 12:00 pm PRESENTATIONS Janusz Poulakowski: Clustering and cooperation in the metal industry Wsparcie Laserowe: Laser welding technology 12:00 pm – 1:00 pm LUNCH BREAK & NETWORKING 1:00 pm – 2:30 pm HANDS-ON PRACTICE Practical session: Laser welding under expert guidance 2:30 pm – 4:00 pm AR TRAINING Augmented reality training: Virtual simulations of laser welding
Target group	Manufacturing companies, academic partners, engineering students, industry professionals
Participants	21 participants
Principles of Green manufacturing included in workshop	The workshop emphasized sustainable manufacturing by promoting advanced laser welding technology, which reduces material waste and energy consumption compared to traditional welding methods.
Training Material package, presentations or video	Both speakers utilized professional presentations. Wsparcie Laserowe demonstrated laser welding techniques through live equipment showcases and AR simulations.
Training material package, presentations	Presentation slides from both Janusz Poulakowski and Wsparcie Laserowe were provided to participants after the event.
Additional information	Promotional materials, including flyers and event schedules, were distributed. The event fostered networking opportunities for both industry and academic attendees.

Funded by the European Union



Funded by the European Union

Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

Organiser	**IDPC / Evoluma**
Type of activity	Workshop
Name of activity	ESG Essentials Workshops: Responsible Management and Strategies [DAY 1 & 2]
Description of the workshop	The two-day workshop introduced participants to the core principles of ESG (Environmental, Social, Governance), combining theoretical foundations with interactive sessions focused on responsible business management and strategic planning. The event aimed to enhance understanding of sustainable development goals and provide tools for implementing ESG strategies in various organizational contexts.
Place/ format	Białystok Sience And Technology Park
Date and time	11-12/12/2024, 09:00 am – 4:00 pm
Speakers	ESG Representatives Company
Agenda	09:00 am – 09:30 am WELCOME & INTRODUCTION 09:30 am – 12:00 pm PRESENTATIONS 12:00 pm – 1:00 pm LUNCH BREAK & NETWORKING 1:00 pm – 4:00 pm WORKSHOPS
Target group	SME's
Participants	15 participants each day
Principles of Green manufacturing included in workshop	The workshop emphasized the principles of sustainable and responsible management by exploring how ESG (Environmental, Social, Governance) strategies can drive long-term value creation. Particular attention was given to aligning business practices with climate goals, ethical governance, and social responsibility standards.
Training Material package, presentations or video	Both days of the workshop featured professionally prepared presentations. Experts introduced participants to key ESG frameworks and reporting standards, supported by real-world case studies. Interactive sessions included tools for stakeholder analysis, ESG risk mapping, and sustainable strategy development.
Training material package, presentations	All presentation slides and supporting workshop materials were shared with participants following the event in a dedicated resource package. This included visual aids, summary documents, and templates for ESG planning.
Additional information	Promotional materials, such as printed agendas and flyers, were distributed during the event. The workshop created valuable networking opportunities, bringing together participants from industry, academia, and public institutions to exchange insights and foster future collaboration.

Funded by the European Union

Organiser	**Pole MecaTech (PMT)**
Type of activity	Workshop
Name of activity	Seminar CANADA / WALLONIA: Collaboration Opportunities & Perspectives in 2025
Description of the workshop	This seminar was organised in Wallonia for the Walloon participants and remotely for the Canadian speakers on 11 March 2025. The framework is the "International" pillar of GEMSTONE: Canada was designated as a priority market by the partner clusters (cf. Strategy roadmap of GEMSTONE). The seminar focused on several objectives: 1. Strengthen Collaborations: Build bridges and enhance partnerships in the sectors of environment, energy, and circular economy. 2. Leverage Contacts: Utilize established contacts to identify industrial challenges and work together with Canadian clusters and ecosystems. 3. Insights from Canada Mission: Share key learnings from the AWEX (Walloon Agency for Exportations) mission to Canada in 2024, focusing on environment, energy, and circular economy, and the ECCP Matchmaking mission to Montreal. [Pole MecaTech participated to both missions] 4. Identify Synergies: Recognize potential synergies for European projects and learn about financial support for technological and innovation partnerships between Wallonia and Canada. 5. Prepare for International Opportunities: Get ready for events like Hannover Messe, where Canada will be the guest of honour.
Place/ format	Business Village Ecolys (5020 Namur – Belgium) | Physical event
Date and time	11/03/2025, 3:00 pm – 7:00 pm

Funded by the European Union

Speakers	Canadian speakers: · Jérôme Lafrenière (NGEN) · Sébastien Garbarino (PRIMA) · Jeanette Jackson (FORESIGHT) · Ghislain Nadeau (PROMPT) · Alex Champagne-Gélinas (INNOVEE) · Xavier Van Overmeire (Dentons Canada) and Julien Lassonde (BDO) · Colin Campbell (Université de Toronto) Walloon speakers: · Aude Segers (WBI) · Vincent Berghmans (JEMA) · Enrique Gonzalez (GreenWin) · Sophie Schmitz (Pôle MecaTech, GEMSTONE Eurocluster) Christophe Van Overstraeten (AWEX Toronto)
Agenda	15:00 - Welcome coffee 15:15 - Introduction by Pôle MecaTech and Greenwin 15:25 - Overview of innovation in Canada: Challenges and opportunities in environment, energy, and circular economy by Canadian clusters 16:35 - Expansion of activities in Canada: Choices, strategies, and challenges for 2025 17:05 - Funding opportunities for collaborative innovative projects between Canada and Wallonia 17:15 - Experience sharing by Jema, participant in the AWEX mission to Ontario in September 2024 17:30 - Opportunities with the Université de Toronto 18:00 - Closing remarks by AWEX and competitiveness clusters 18:30 - Networking drink
Target group	Business leaders, corporate managers, academic partners
Participants	29 participants
Principles of Green manufacturing included in workshop	The workshops focused on innovation and partnership opportunities, and on potential synergies in the ecosystems of energy, environment and circular economy (including digital solution applied to manufacturing) between Wallonia and Canada
Training Material package, presentations or video	Each speaker disseminated a powerpoint presentation The agenda and speakers were promoted on the webiste of Pole Mecatech and on linkedin by several posts.
Training material package, presentations	Participants received digital copies of the presentations after the seminar
Additional information	The event encouraged networking among business leaders and academic professionals, fostering collaboration with Canadian ecosystems.

Funded by the European Union

Funded by the European Union

Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.


WALLONIA – Opportunités en 2025
NOS DOMAINES D'ACTIONS STRATÉGIQUES
MATÉRIAUX AVANCÉS
TECHNOLOGIES DE CONCEPTION ET DE FABRICATION AVANCÉES
LES ÉCOSYSTÈMES
ÉCONOMIE CIRCULAIRE
ENERGIE DURABLE
INDUSTRIE 5.0
LES DÉFIS
L'EFFICACITÉ OPÉRATIONNELLE
L'EFFICACITÉ ÉNERGÉTIQUE
Pôle MecaTech
Façonnons ensemble l'avenir de l'industrie

Organiser	**IDPC / Evoluma**
Type of activity	Workshop
Name of activity	ESG Essentials Workshops: Responsible Management and Strategies
Description of the workshop	The two-day workshop focused on responsible management and the development of effective ESG (Environmental, Social, and Governance) strategies. The goal was to equip participants with practical knowledge and tools to build sustainable business strategies, fostering a deeper understanding of ESG principles and their application in corporate environments. Led by Dr. Łukasz Smolarek, the workshop guided attendees through each step of crafting ESG strategies, emphasizing the importance of aligning business goals with sustainability practices. Key topics included goal setting, ESG process audits, stakeholder dialogue, and competitive advantage through sustainable practices. Participants engaged in interactive sessions, including SWOT analysis, KPI design, and strategic planning tailored to their organizations' needs. Real-world examples and trend analyses were incorporated to highlight ESG challenges and opportunities, both in Poland and globally.
Place/ format	Białostocki Park Naukowo-Technologiczny, Białystok | Physical event
Date and time	11-12/12/2024, 9:00 am – 4:00 pm
Speakers	Dr. Łukasz Smolarek – Expert in sustainable development and corporate responsibility
Agenda	Day 1 – 11/12/2024 9:00 am – 9:30 am WELCOME & INTRODUCTION 9:30 am – 11:00 am ESG STRATEGY BASICS Defining ESG strategy goals from a business perspective 11:00 am – 11:15 am COFFEE BREAK 11:15 am – 1:00 pm ESG PROCESS AUDIT Preparing for an ESG audit: practical steps 1:00 pm – 2:00 pm LUNCH BREAK 2:00 pm – 3:30 pm SUSTAINABILITY CHALLENGES Analysis of global and local trends in sustainable development 3:30 pm – 4:00 pm Q&A & NETWORKING Day 2 – 12/12/2024 9:00 am – 9:30 am RECAP OF DAY 1 9:30 am – 11:00 am STAKEHOLDER DIALOGUE Practical application and real-world examples 11:00 am – 11:15 am COFFEE BREAK 11:15 am – 1:00 pm SWOT ANALYSIS FOR ESG Introduction to task design and strategic planning 1:00 pm – 2:00 pm LUNCH BREAK 2:00 pm – 3:30 pm KPI DESIGN & COMPETITIVE ADVANTAGE Setting goals, tasks, and KPIs to build competitiveness through ESG 3:30 pm – 4:00 pm CLOSING DISCUSSION & CERTIFICATE DISTRIBUTION
Target group	Business leaders, sustainability officers, corporate managers, academic partners
Participants	15 participants each day
Principles of Green manufacturing included in workshop	The workshop emphasized sustainable business practices by promoting responsible management and strategic alignment with ESG principles, focusing on reducing environmental impact, fostering social responsibility, and ensuring transparent governance.
Training Material package, presentations or video	Dr. Łukasz Smolarek used comprehensive presentations, real-world case studies, and interactive exercises, allowing participants to directly apply ESG concepts.

Funded by the European Union

Training material package, presentations	Participants received digital copies of the presentations and strategic planning templates to support the implementation of ESG strategies in their organizations.
Additional information	Promotional materials, including event agendas and speaker bios, were distributed. The event encouraged networking among business leaders and academic professionals, fostering collaboration on sustainable initiatives.  

Funded by the European Union

Organiser	**CLUST-ER MECH**
Type of activity	Workshop in presence
Name of activity	Apertura Piazza MECH - Supporto alla Green Transition delle PMI manifatturiere: il progetto GEMSTONE - Opening MECH Square - Supporting the Green Transition of Manufacturing SMEs: the GEMSTONE project
Description of the workshop	The workshop opened “Piazza MECH” the shared booth within the MECSPE Fair in Bologna that include a speech corner, where members of Clust-ER MECH had the possibility to present their innovations. The workshop presented the main results of the GEMSTONE project, showing: The Gemstone project and its main activities The published calls Some of the winning projects (the most related to the Fair theme) This was an opportunity to show the possibility and opportunity for manufacturing SMEs to benefit from European projects.
Place/ format	In place
Date and time	05/03/2025 (11:30 – 12:00)
Speakers	Nicolò Bertolini, Federico Capucci
Agenda	Agenda: 11:30 Welcome speech and presentation of the list of workshop in the “Piazza MECH” programming (Federico Capucci)

Funded by the European Union

	11:35 Presentation of the Gemstone project and how it supported Green Transition for Manufacturing SMEs (Nicolò Bertolini)
Target group	SME`S/ business partners/ Innovators
Participants	15
Principles of Green manufacturing included in workshop	The workshop main theme was the presentation of the winning project, especially: Green Innov projects winners – emphasizing the possibility for SME to bring new solution on the market Green Adopt project winners – highlighting the collaboration among different entities towards a common goal. While presenting the winning projects, all the main themes of Gemstone has been implemented
Training material package, presentations	 

The joint European cycle of awareness-raising and mobilization workshops successfully met and exceeded its original goals, with a total of 19 workshops—8 at the European level and 11 at the regional level—engaging 403 participants from across the manufacturing ecosystem. These workshops collectively fostered a deeper understanding of green manufacturing principles, from eco-design and circular economy practices to funding opportunities and workforce upskilling.

By addressing both cross-border strategies and local implementation challenges, the initiative not only empowered SMEs and industrial actors with practical tools and knowledge but also reinforced a shared European vision for a sustainable industrial future. This coordinated effort marks a significant step toward the transition to greener, more resilient, and innovation-driven manufacturing ecosystems throughout Europe.

Funded by the European Union