SING FOR GREEN PRESS RELEASE

[**Porto Salvo, November 2025**] The **SINGforGREEN Project** (Project nº 2023-1-ES01-KA220-HED-000155981) successfully concludes after two years dedicated to integrating sustainability, circularity and green competences into the Designer for Additive Manufacturing (DfAM) curriculum at EQF Level 7.

Funded by the European Union through the Erasmus+ Programme, the project responds to key European priorities such as the European Green Deal, Climate Action, Industry 5.0, and the advancement of green and digital competences across high-tech sectors.
Because the design stage determines most of the environmental impact in Additive Manufacturing (AM), strengthening designers' green competences is essential to support Europe's green transition.
SINGforGREEN addresses this challenge by incorporating sustainability skills, eco-design principles, lifecycle thinking and resource-efficiency strategies into one of Europe's most advanced AM qualifications.

Building a Strong Foundation: Needs Analysis & Competence Mapping

During the first semester, partners carried out a comprehensive Needs Analysis to identify the sustainability-related skills required for designers working in AM environments. This phase included:

- Desk research aligned with GreenComp, circular design, LCA and Industry 5.0 principles;
- Surveys and dedicated interviews with AM companies, designers and education and training centres;
- Focus groups validating future skills needs and industry expectations;
- A competence map highlighting gaps, priority areas and opportunities for curriculum development.

The resulting analysis defined a clear roadmap for integrating sustainability into the DfAM qualification and ensured strong alignment with both the job market and the European policy context.

Integrating Sustainability into the DfAM Curriculum

Based on the research findings, the second semester focused on the creation and integration of two new sustainability-focused modules within the DfAM EQF 7 curriculum.

These modules introduce advanced green competences, including:

- Eco-design and design for environment methodologies;
- Lifecycle assessment and environmental impact evaluation;
- Material and energy efficiency strategies in AM;
- Circular economy approaches and sustainable design decision-making.

The project also produced a Pedagogical/Curriculum Framework for Green AM, providing guidance for higher education institutions, VET providers and industry academies on how to adopt sustainability-centred instructional approaches. These developments ensure that future designers are capable of making informed, sustainability-driven decisions throughout the AM workflow.

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Digital Training Resources & Implementation Support

In the third period, SINGforGREEN created a complete set of digital training materials, ensuring flexible, accessible and modern learning pathways. These include:

- Slide decks with case studies and practical exercises;
- Assessment tools based on learning outcomes;
- Tutorial videos and on-demand online learning materials supporting autonomous progression;
- A Guide for Implementation to support institutions integrating the new curriculum and transitioning towards greener AM training environments.

The emphasis on flexible, on-demand learning reduces operational costs, increases accessibility, and contributes to lowering the environmental footprint of training delivery.
All materials will remain freely available in open access through the project website (**www.singforgreen.eu**), supporting transferability and long-term adoption.

Pilots and Validation Across Europe

Pilot courses were implemented across partner countries with master's students, early-career designers, educators and industry professionals, engaging a total of 145 participants. This broad participation allowed to validate both the relevance and the clarity of the new curriculum.

The pilots demonstrated learners' ability to apply sustainable design strategies in real AM scenarios and confirmed that the training materials were adaptable to different organisational and national contexts. They also highlighted the effectiveness of digital and on-demand tools in supporting the development of green competences
The feedback collected during these pilots directly informed the refinement of the materials, learning outcomes and assessment strategies, ensuring that the final curriculum is accurate, industry-aligned and future-proof.

Impact, Dissemination and Long-Term Sustainability

In its final semester, SINGforGREEN focused on maximising the adoption and long-term impact of its results by organising national multiplier events across partner countries and a European-level final conference, complemented by presentations to industrial and academic networks.

The project also maintained continuous dissemination through social media, sectoral events, conferences and the project website.

SINGforGREEN has contributed to advancing the green transition in Europe. By strengthening green skills in advanced manufacturing, the project directly supports employability, reduces skills mismatches, and reinforces Europe's shift towards high-value green jobs.

PARTNERS

IDONIAL CENTRO TECNOLÓGICO · Brunel University London · Metalska Jezgra · Lattice. · EWF · FAN 3D

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