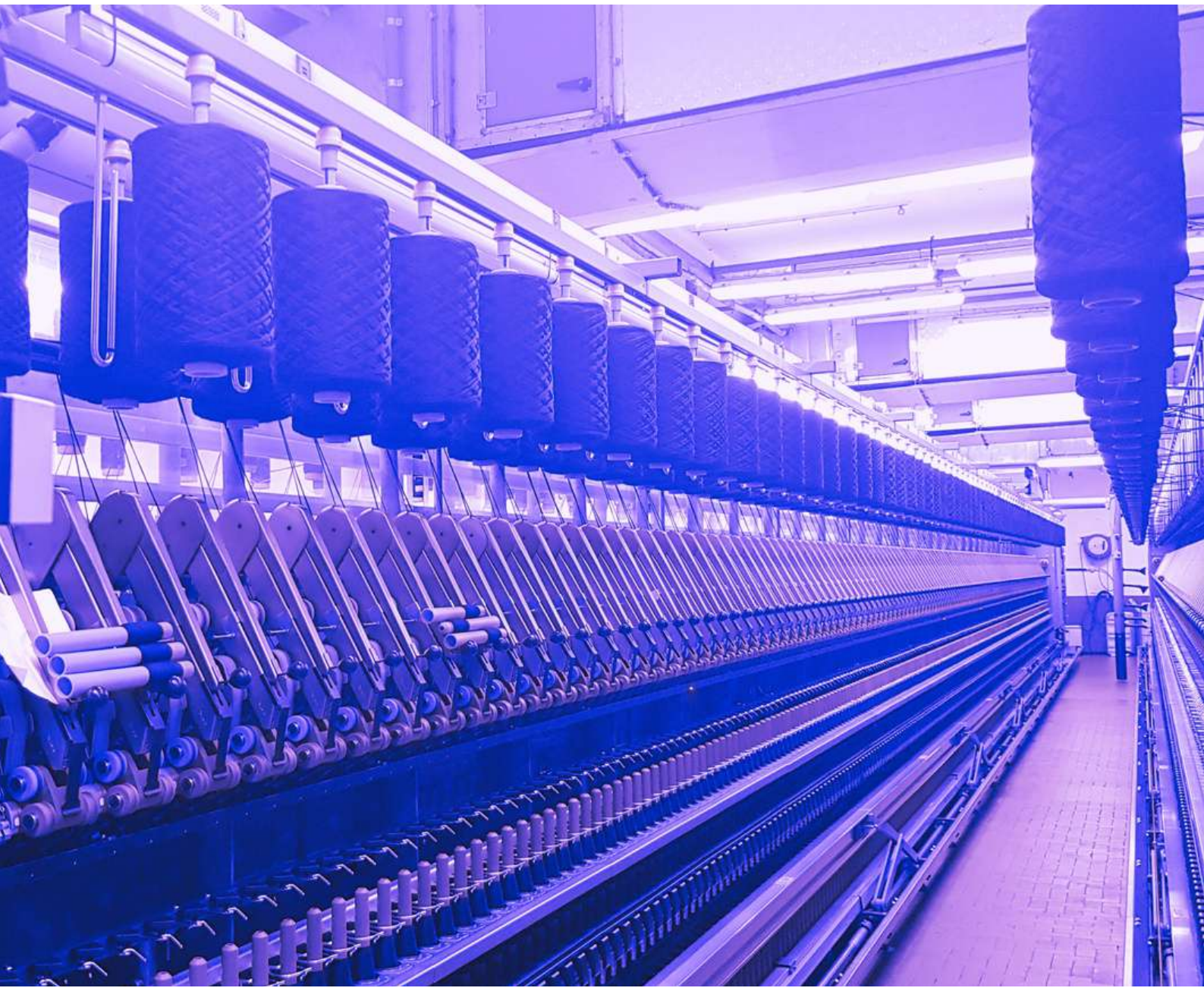
AddTex

Advancing industrial digital and green innovations in the advanced textile industry through innovation in learning and training

D2.1 Gap Analysis



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01.EXECUTIVE SUMMARY

The ADDTEX projects main objective is to support the resilience and sustainable GREEN, DIGITAL & SMART transition and advancement in the textile sector through innovative learning and training. The partners representing Czech, Germany, Greece, Italy, Ireland, Portugal, Romania, Slovenia, Spain and Sweden have researched the innovations, challenges and opportunities critical to the sector; and established that strategical engagement between industry representatives and higher education (HEI) and vocational education and training (VET) providers, is an assertive way to achieve the project's goal.

272 Textiles companies, 47 VET and 55 HEI participated in this phase of the project in different collaborative sessions (Meetup: 87 companies, 17 VET, 18 HEI; Field research: 94 companies, 15 VET, 18 HEI; Living Lab: 91 companies, 15 VET, 19 HEI) . Through this research and gap analysis a series of recommendations have been made to assist in areas specific to the green, digital and smart transitions.

Advanced textile materials are a thriving sub-sector in the textile and clothing ecosystem across Europe, based on high added value and differentiation as unique selling proposition. Innovation in this field is key in the resilience building of the EU textile sector and in ensuring its competitiveness, particularly in volatile, uncertain, complex and ambiguous (VUCA) environments, such as were presented through the COVID-19 pandemic.

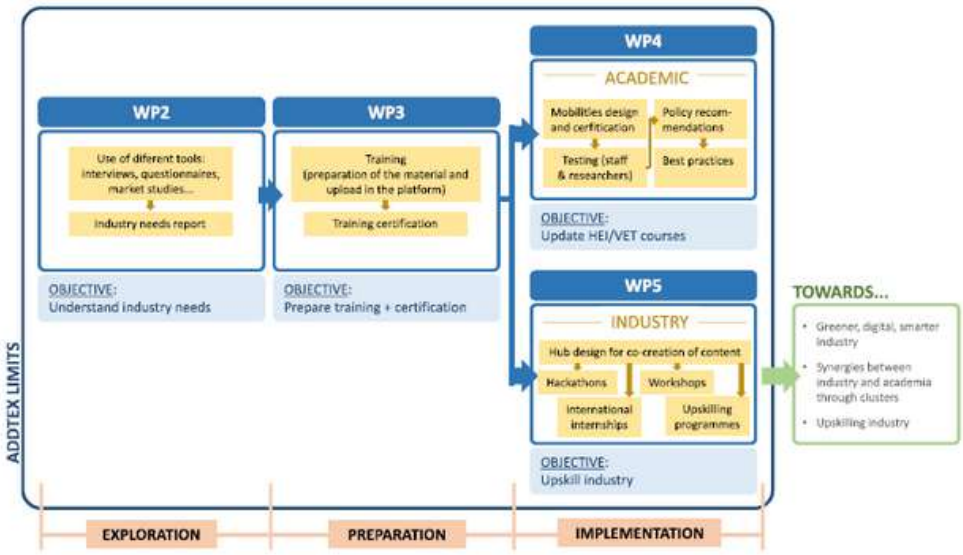

Fig 1: Core parts of ADDTEX Project

EXECUTIVE SUMMARY

The project aims to strengthen and stimulate a sense of initiative and entrepreneurial attitudes, mindsets and skills in learners, educational staff and skilled workers, in line with the Green Deal and Entrepreneurship Competence Framework. The strength and expertise of established and developing industry clusters will continue to build competencies, support the textile sector growth and present opportunities for impact driven, sector-specific research.

The research that focused on gap analysis began in 2022. Desk-based research was used to identify innovations, challenges and opportunities facing the textile industry and HEI and VET providers. Following this, field research was introduced and through the successful engagement of 91 industry partners. Meet-ups, workshops and living labs followed, providing a platform to share key insights and gather information relevant to the sectoral challenges. The range of methodologies employed, successfully unearthed complex challenges facing the textile industry in relation to sustainable practices and circularity, smart systems and digital tools and technologies innovating the sector.

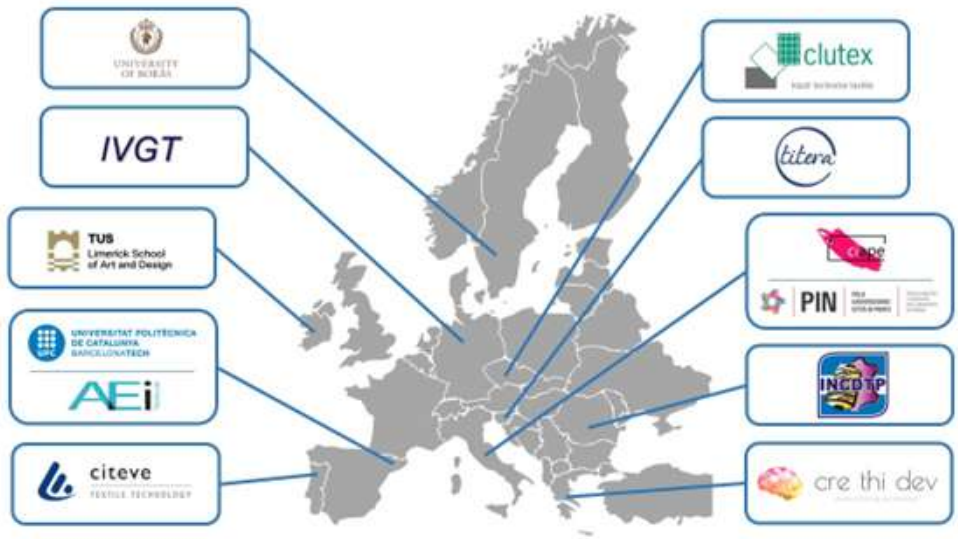

Fig 2: Partners & Countries involved in ADDTEX Project

02.GAP ANALYSIS

In order to bridge the gaps identified, a combined and holistic approach is required, fostering the digital and green transition from the early-stage entry of graduates and skilled workers into the industry, through to supporting established teams seeking up-skilling, ensuring that they remain agile and resilient in the sector.

Facilitation of knowledge transfer and exchange throughout the industry ecosystem is vital to sustainable growth and smooth transition. The ADDTEX project will support continued cluster activities, engaging academics and researchers in collaborative research to foster new, innovative and multidisciplinary approaches to teaching and learning. Knowledge transfer and skill exchange will be supported through educational tools and Massive Open Online Courses (MOOCs) that engage existing teams through accessible platforms that connect graduates and skilled workers with industry and encourage co-creation between the academic and industrial sectors.

The gap analysis work package brings together the findings of the ADDTEX partners, 47 VET providers, 55 HEI and 272 Textile companies.

Companies that participated in the research provided insights into the challenges and recognised opportunities relating Green, Digital & Smart technologies, identifying areas in which innovations and impact can be achieved through learning and training. These are listed below in respect to Green, Digital & Smart.

03. GREEN TRANSITION

- Waste mitigation, management and recycling
- Energy and resource consumption
- Sustainable fibre innovations and technological advancements in fibre processing and recycling
- LCA, Life Cycle Analysis, assessment and traceability across all critical phases and areas of operations
- Innovations and ambitious projects linked to dying, finishing & water management

03.1 DIGITAL TRANSITION

- Technologies linked to streamlining production
- Smart sensor technologies for data acquisition
- Tracking and authentication methods
- Database management and cyber security
- Design Tools and software evolution

03.2 SMART TRANSITION

- Smart authentication methods & Radio Frequency Identification RFID technologies
- Complex composites and integrated electronics
- Innovations linked smart & intelligent textiles
- Smart sorting systems and Ai
- B2B communications and Marketing using VR & AR

04. NEXT STEPS

The Addtex partners will commence planning and begin to implement work package 3 (WP3) which will take the results of this report and uses the findings to inform and expand a suite of industry specific resources and online training and learning tools and MOOCs to address the gaps identified through the research and support the sector and its wider ecosystem.