Interreg Baltic Sea Region

Co-funded by the European Union

CIRCULAR ECONOMY
CIRC-2-ZERO

Future circular manufacturing with CIRC-2-ZERO

DIGITAL TWIN DEMO PLATFORM FOR A SUSTAINABLE AND COMPETITIVE PRODUCTION

CIRC-2-ZERO helps manufacturing SMEs in the Engineered Wood Product (EWP) sector to a more sustainable, resource efficient and future-proof business. With the help of a cloud based digital simulation environment the manufacturing company can test, simulate and optimize all from circular product design to a circular value chain without disrupting ongoing operations. The pilots are supported by the Resilience Transformation Hub, which offers mentoring, networking, and knowledge exchange opportunities for participating SMEs across Europe.

The project enables a faster way to circular production

CIRC-2-ZERO is designed to give SMEs working with EWP support in taking the next step towards circular manufacturing and at the same time make the transition more strategic and efficient. Using a digital environment to analyze processes, evaluate solutions and explore new ways to work enables e.g. lower carbon dioxide emission, efficient use of resources and development of sustainable products and value chains.

The aim is to strengthen the industries abilities to have a production that's circular, flexible and competitive without compromising profitability.

What is a digital twin?

A digital twin is a virtual, digital replica of a physical object, process, or system, connected by a two-way flow of real-time data from sensors and other sources. Making a digital twin of a product enables exploring of different scenarios, identifying improvements and decision making based on data without risking downtime in production or expensive mistakes.

Do your company want to participate?

During 2026-2027 seven Estonian companies in the EWP sector gets the opportunity to become the first ones to test and evaluate the Digital Twin Demo platform. The participating company will be an important part of the development of the platform and will at the same time access valuable knowledge and experience. This will strengthen the company's own sustainability and innovation strategies. Read more about the process on the next page.

Want to participate?

Click here to register

SUMMARY

Project period: 01.03.2025 - 29.02.2028

Aim for Estonia: Together with seven SMEs validate through structured testing and piloting and contribute to development and improvements of the Digital Twin Demo platform. The SMEs contribution is crucial when developing a practical and long-term tool for Engineered Wood Products. Also, at the same time the participants will get valuable knowledge and experience that strengthens their own sustainability and innovation work.

Target Group: Manufacturing SMEs in the sector of Engineered Woof Products (EWP)

Price: No costs.

Estonian partners: Tallinn University of Technology and Sparkup Tartu Science Park

Financers: Interreg Baltic Sea Region

Do you want to know more: Please Contact

Sparkup Tartu Science Park
Noora Ustav | noora.ustav@teaduspark.ee
TalTech
Viktoria Voronova | viktoria.voronova@taltech.ee

TIMELINE / WORK PROCESS FOR PARTICIPATING COMPANIES

Digital Twin Demo

1

OPEN CALL FOR SME

is ongoing

2

INTRODUCTION AND START-UP

Tailored training program to support successful piloting and enhance knowledge. This will include regional webinars and workshops designed to prepare selected SMEs for piloting.

3

TESTING (1–3 MONTHS)

In 2026–2027, companies will pilot the Digital Twin Demo platform for 1–3 months. Each test session requires around 1–3 hours, depending on the complexity of the SMEs processes and how many modules they choose to test.

What is expected of participating company?

Active in the different steps which includes introduction, education, simulations and analysis.

Online resources and support during the process

SMEs will get technical support, knowledge and tools for piloting.

Step by step, from testing to implementation

As a participating company you will get access to a cloud-based Digital Twin Demo platform where you can test and explore circular manufacturing based on your own production.
The work is gradually; it begins with an introduction and education, followed by simulation and analysis, and ends with evaluation of the results. You will get recommendations on how the insights can be used in your business.

The platform offers two modules

#1 Circular product design module
enables manufacturers to redesign products for durability, repairability, and recyclability using simulation tools.

#2 Value Chain Design Module
allows companies to map, analyse, and optimize their entire supply chain for circularity

Possible strategic business gains

Material Cost Reduction
- Optimized material selection
- Recuced waste in design phase
- Better tracking of material flows
- Improved recycled content usage

Faster Product Development
- Virtual prototyping reducesiterations
- Parallel design testing
- Earlier identification of issues
- Knowledge retention and reuse

Value Chain Pipeline
- End-to-end valuechain mapping
- Bottleneck identification
- Inventory optimization
- Reduced logistics costs

Business Model Testing (Product-as-Service Transition)
- Circular business modelsimulation
- Service revenue opportunities
- Refurbishment value capture
- Customer relationships strengthening

Resource Efficiency
- Energy consumptionreduction
- Waste stream minimization
- Water usage efficiency
- Carbon footprint reduction

REGISTER INTEREST

Do your company like to participate and get the possibility to test and pilot the Digital Twin Demo platform? Please contact: Sparkup Tartu Science Patk - Noora Ustav | noora.ustav@teaduspark.ee

READ MORE

FUNDED BY:

Interreg Baltic Sea Region

Co-funded by the European Union

CIRCULAR ECONOMY
CIRC-2-ZERO

PROJECT PARTNERS IN ESTONIA:

TAL TECH

SPARKUP Tartu Science Park