WANDERFUL .STREAM | Interreg Euregio Meuse-Rhine European Regional Development Fund | EUROPEAN UNION

IMPACT REPORT

// JDC INNOVATION

INTRODUCTION

This report presents the results of one of the innovation tracks carried out during the European Interreg project Wanderful.stream (2020-2023). In this project, seven partners from the Meuse-Rhine Euroregion have pooled their knowledge, strengths and resources to jointly support small and medium-sized enterprises in their transition to a circular economy.
Wanderful.stream offers companies free guidance and support in valorising waste valorization and residue streams and initiates and facilitates the co-creation of circular prototypes together with technologists, designers and business developers in innovation tracks. This report focuses on the results of one of these innovation paths.
The present report focuses on the results of the innovation track of the company JDC Innovation.

INNOVATION TEAM

DESIGN
Philippe Swimberghe

BUSINESS DEVELOPMENT
Pauline Pötgens (EKLO)

COORDINATION
Sara Boxus (Wallonie Design)
Pauline Pötgens (EKLO)

JDC INNOVATION

Since 2006, Jean Del'Cour's technical division "JD'C Innovation" has operated as an innovative SME, mainly supplying the aerospace, defense, rail and medical sectors. This division offers efficient solutions in Connectics, Mechatronics and Composites from manufacturing to complete processing, including design, development, industrialization, reengineering and series production.

JDC Innovation joined the Wanderful.stream project in order to identify opportunities for new business opportunities, particularly in the medical sector. Like most Entreprises de Travail Adapté (ETAs), they want to develop their activities beyond subcontracting, by developing and marketing their own products.

The company manufactures carbon fiber and fiberglass composite parts in autoclave molds. Cuttings from these parts, which are carbon-impregnated textile scraps, are an interesting residual stream to valorize, given the very high quality of this material, the disposal of which currently represents a sizeable cost for the company.

As JDC Innovation has both machining equipment and molds, there is an opportunity to manufacture small standard parts from carbon fiber-impregnated textile scraps. In addition to the medical sector, the sports sector could also be explored.

www.jean-delcour.be

The aim of the innovation track was to support JDC Innovation in the development of ortheses using these carbon fiber-impregnated textile scraps. This concept was developed by a team of students from ESA Saint-Luc Liège and HEC Advisory, led by designer Brian Stepien.

01. Identification of applications for carbon fiber that optimize its properties (strength vs. lightness)

02. Optimizing company machinery and showcasing know-how

INNOVATION PROCESS

The carbon fiber-impregnated textile cut-outs are a major limiting factor from the start, and had a significant influence on the launch of the innovation track.

An analysis of costs and market competition immediately ruled out the concept of upcycling medical ortheses, originally developed by students at the bootcamp. With prices for virgin raw materials too low, and strong competition from Asia, it would be economically unsustainable to manufacture ortheses through the upcycling of textile scraps impregnated with carbon fiber.

The project team then started from scratch to explore other ways of adding value to this specific, high value-added waste stream.

STEP 1

Drafting the design brief

Since the initial constraint in this track is the material (textile scraps impregnated with carbon fiber), designer Philippe Swimberghe took the "reverse" approach to "classic" product development. Instead of starting from a product to be designed with specifications, a target, a functionality... he started from the material and the size of the scraps to explore potential new applications.

Search for applications

This led us to focus our research on a small-scale carbon product where the properties of carbon fiber are exploited to their full potential (strength vs. lightness of material). The applications in drone and bicycle manufacturing appealed to JDC Innovation. The business expertise team then stepped in to research the market and approach potential business partners.

Quelques produits relevés lors des recherches dans le domaine du sport :

Pédales vélo

Poignées vélo

Chariot golf

Quelques produits relevés lors des recherches dans le domaine du travail ou de l'outillage :

« Griffes » en carbone permettant aux élagueurs / arboristes-grimpeurs de monter (et descendre) dans les arbres.

A titre indicatif, le prix de ce modèle est de +/- 530 euro HTVA

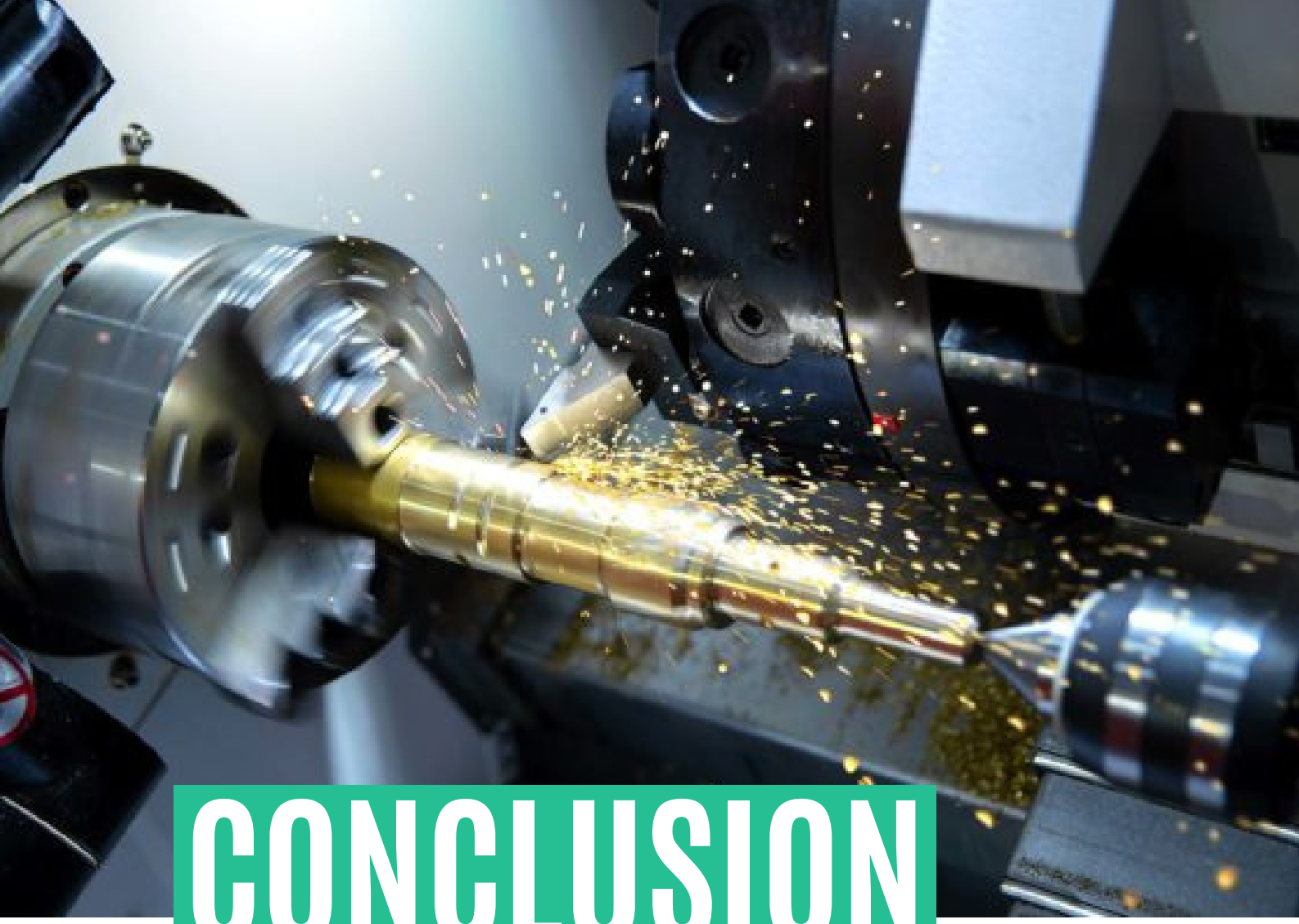
STEP 3

Market research and business partner identification

Business expertise was conducted by consulting firm EKLO. A market study was launched specifically on the market for products and accessories for drones and bicycles, often made up of small carbon parts.

EKLO conducted qualitative interviews with potential partners. Although interested in the carbon source and the storytelling behind its local valorization, the companies and suppliers interviewed were unfortunately reluctant to jeopardize their relationship with their carbon fiber supplier if they reduced the quantities ordered. The JDC waste stream and the potential for recycling were not in sufficient quantities to produce all the carbon parts required for drones and bicycles.

The project team advised JDC Innovation to survey its existing customers about their needs for small carbon parts. However, they showed no interest in the deposit. The innovation track came to a halt.



CONCLUSION

JDC Innovation's innovation track has helped the company assess the financial feasibility of a valorization project for textile offcuts impregnated with carbon fibers. While the material's properties are interesting, and its potential applications diverse, the valorization of this source is not yet economically attractive due to strong competition from carbon suppliers and products made from virgin material.

Interreg
Euregio Meuse-Rhine
European Regional Development Fund

EUROPEAN UNION

Interreg EMR transcends borders by enabling collaboration between regional areas in different countries. We are investing in projects on innovation, the economy, social inclusion and training, and territorial cohesion. By encouraging cross-border collaboration, we strengthen the economic and social fabric in the border region between Belgium, Germany, and the Netherlands.

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Euregio Maas-Rijn
Europees Fonds voor Regionale Ontwikkeling

EUROPESE UNIE

In cooperation with:

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DISCOVERY MUSEUM

Z33

EKLO

pom Limburg economisch versnellen

WALLONIE DESIGN

Chemelot Innovation and Learning Labs

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