

Fairmat inaugurates its carbon fiber composite materials recycling plant in Bouguenais (Loire-Atlantique - France)

Fairmat has opened a robotized plant near Nantes to industrialize its 'virtuous recycling' process, treating more than 3,500 tons of waste per year.

A high-tech factory

The Fairmat plant in Bouguenais applies the principles of Smart Manufacturing, relying on robotics and machine learning.

Fairmat plans to deploy over a hundred robotic arms, across the plant's 4,000m² area to implement Fairmat's proprietary recycling process. Robotics will allow the company to upscale the operation and treatment capacity.

Big data combined with Artificial Intelligence algorithms (particularly machine learning) ensures absolute traceability and generates understanding of the materials, while continuously improving the process.

The technology, which represents an investment of 7 to 8 million euros per year in R&D, also means Fairmat will be expanding their team, which currently numbers 80 people. Eventually, the Bouguenais plant will employ 400 people. In addition, the plant's development includes the implementation of a self-sufficient energy plan.

Carbon fiber, a material essential to environmental transition

Light and very resistant, carbon fiber composite (CFRP) is essential to the energy transition, for the storage of hydrogen or in the conception of wind turbine blades. Today, CFRP is mostly sent to landfill or incinerated after use.

Fairmat have developed a new and more sustainable method – a virtuous recycling process using mechanical cutting low in carbon footprint.

Innovative and 'virtuous' recycling with a big environmental impact

Fairmat has already signed around thirty contracts, with companies such as Hexcel (a global player in the production of composite materials and former tenant of the Bouguenais site), Tarmac Aerosave (a French aeronautical services group) and Siemens Gamesa (a world leader in the wind power industry). These agreements allow the company to recover production scrap and industrial carbon fiber waste to create a responsible and sustainable material.

In its standard version 'Fairmat Quest', this new material is 10 times less expensive than new composite, significantly more resistant and twice as light as aluminum.

It therefore constitutes a genuine replacement, at a stable cost, for ALL materials - from wood to steel, while saving on CO₂ emissions. This will allow the savings of 15 000 metric tons of CO₂e every year according to the findings of the simplified life cycle analysis of the material carried out by the firm Greenflex, taking into account the avoided impacts of replacing virgin materials.

In addition, this material, which has a lifespan of about 20 years, can be recycled up to 5 times without loss of performance.

"We see the plant in Bouguenais (Loire-Atlantique) as a pilot site at the cutting edge of recycling technology. We will follow this by deploying the technology in several countries, starting with the United States in 2023, then in a number of European countries" says Fairmat CEO Ben Saada.

Fairmat's founder, Saada is convinced that the use of recycled materials will also lead the industry to rethink manufacturing: for example, eco-design and product repairability. The idea is not only to substitute recycled materials for new ones, but to produce differently.

Fairmat intends to accompany its customers on this journey, with a 'Fairmat Infinity' range – tailor-made products, by adapting the characteristics of the material to specific needs.

Ben Saada concludes: **"Fairmat's project goes far beyond the treatment of industrial waste. It's about creating a new ecosystem with all our customers and partners"**.

About FAIRMAT

Founded in 2020 by Ben Saada, FAIRMAT is a French deeptech startup that aims to revolutionize the recycling of carbon fiber-based composites. Thanks to its disruptive technology, FAIRMAT is creating a sustainable future for composites and a more environmentally friendly manufacturing industry over the long term. With 3,8kg of CO₂e per kilo of material produced, Fairmat Quest, our baseline product, is one of the most performing and sustainable material available for the circular economy.

More information at www.fairmat.tech