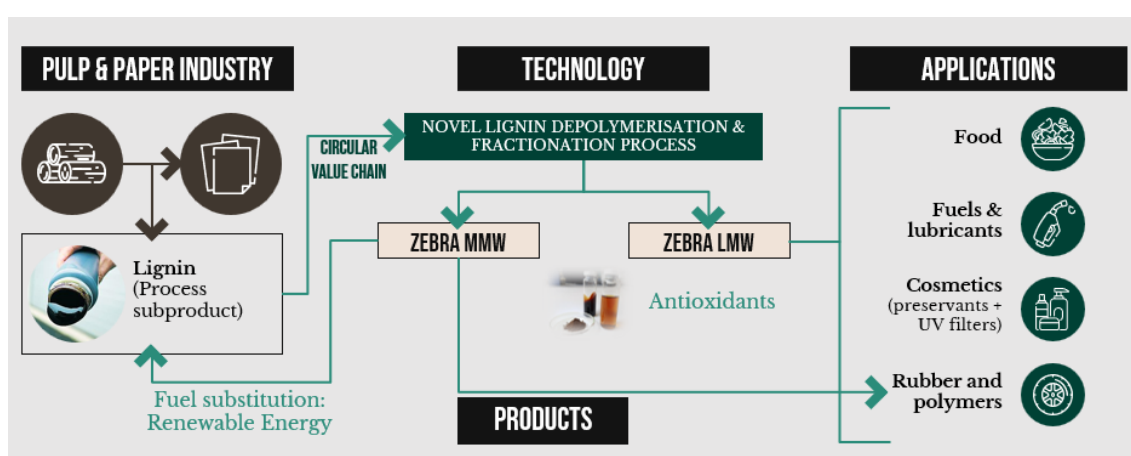


This post is part of the ZEBRA-LIFE 101 series. In this xxx edition, we will introduce the basis of the ZEBRA-LIFE project and we will go over the whole project value chain; from the raw materials, the technology, the products that will be obtained and a review of its potential benefits. Stay tuned to not miss anything!

LIGNIN DEPOLYMERIZATION TECHNOLOGY - CENER

CENER has developed a unique thermo-oxidative process to produce high value added bioaromatic compounds from Lignin, namely polyphenols. These are promising substitutes to the fossil fuel-based additives currently produced in the range of 500,000 tonnes/year¹ for a wide variety of applications, such as in polymers & rubber, fuels & lubricants, food & feed industry and cosmetics. Additionally, phenolic units can be used as building blocks for the synthesis of polymers and resins for coatings, thus avoiding the use of their fossil counterparts and creating more sustainable plastics.



ZEBRA technology comprises two steps: a reaction for the depolymerization & functionalization of the lignin and a second step, the downstream purification, for the isolation of the polyphenols. By carefully adjusting the reaction conditions, the process can not only obtain a phenolic-rich mixture, but also increase their antioxidant activity and UV-blocking properties. The technology will enable paper mills to valorize their black liquor, a byproduct that is traditionally used as energy fuel. Furthermore, two renewable additives (ZEBRA LMW and ZEBRA MMW) with Antioxidant and UV filter functionalities will be obtained and contribute to the creation of a new circular value chain.

Utilizing the residual black liquor from the paper and pulp industry ZEBRA-LIFE will reduce resource consumption and facilitate the transition toward a sustainable, circular, toxic-free, energy-efficient, and climate-resilient economy.

The ZEBRA-LIFE project will also study how to scale up the technology and prepare for it to be replicated in the market. Currently the process and the bioaromatic product is under patent application. We look forward to updating you about other elements of business and intellectual property later in the series.

¹ Estimated value from different online market data sources ([transparencymarketresearch.com](https://www.transparencymarketresearch.com); [marketstudyreport.com](https://www.marketstudyreport.com); [grandviewresearch.com](https://www.grandviewresearch.com); [marketsandmarkets.com](https://www.marketsandmarkets.com); [alliedmarketresearch.com](https://www.alliedmarketresearch.com); [mordorintelligence.com](https://www.mordorintelligence.com); [adroitmarketresearch.com](https://www.adroitmarketresearch.com); [credenceresearch.com](https://www.credenceresearch.com),...)