



## Industrial Feather Waste Valorisation for Sustainable KeRatin-based Materials

### Enjoy reading the KaRMA2020 newsletter!

The project aims to the industrial manufacture and exploitation of sustainable raw materials from feather waste to develop innovative green products for high impact cross-sectorial markets. The project is funded in the frame of Horizon2020 Topic **SPIRE-03-2016: Industrial technologies for the valorisation of European bio-resources into high added value process streams**.

The KaRMA2020 project is entering its last year. The initial lab-scale experiments have been substituted by pilot demonstrations, end-products testing and feasibility studies to ensure the roll out of the innovative technologies. For the partners involved in the project, passionate for the R&D world, this is an exciting issue, as part of our jobs! But, for the general public, a question may arise: how will the project bring a positive impact to the European society? The present 4<sup>th</sup> e-Newsletter of the project will be dedicated to a better understanding of how KaRMA2020 will give a positive impact on the society.

### ENSURING A FOSSIL-FREE SOCIETY

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The KaRMA2020 technologies valorise the waste feather streams produced in the poultry facilities and make use of their keratin in order to manufacture bio-based products, which substitute fossil-based materials. Considering the limited fossil sources in the world, near their exploitation peak, and the great environmental impacts brought by

them, finding bio-based alternatives is a key innovative step to ensure the viability of the future European society. Depending on the product, reduction of fossil sources will range from 50 to 100%. In addition, the reduction of the energy consumption linked to the novel value chains will be higher than 30%. Yes, this is what you are thinking: chickens may save the day in the future!



## SOLVING ENVIRONMENTAL ISSUES, CREATING A CIRCULAR PATH!

After some sanitary crises in the past, such as the avian flu or the bovine spongiform encephalopathy, the waste from the poultry industry became classified as a hazardous waste of costly and difficult management. The current alternatives to incineration or safe disposal of the feathers in landfills, like rendering for animal food, are of very low profitability. The KaRMA2020 technologies will become the greatest uplift for the EU poultry industry in years! A cheap, concentrated source of biomass will be used to create bio-products of high added-value, instead of becoming an environmental concern.

However, the environmental benefits don't stop here! The new value chains are reinforcing the circular economy concept: feathers are treated to be either upcycled in new technical cycles (textiles, thermoset resins, etc.) or returned to the biogenic cycles as fertilisers. It is a win-win for the industry and the environment!



<sup>1</sup> Joardar, J.C. & Rahman, M.M. Int J Recycl Org Waste Agricult (2018) 7: 183. <https://doi.org/10.1007/s40093-018-0204-z>

## CREATING JOBS AND WEALTH IN EUROPE

The EU bioeconomy is currently generating 4.1 % of the EU Gross Domestic Product (GDP) and employing 8.2 % of the labour force. In the future, this sector is expected to create up to 1 million new jobs by 2030! The KaRMA2020 concept will allow new synergies to be built among the different sectors of the bioeconomy, such as agriculture, bio-based chemicals, bio-based textile or poultry farming. Thus, innovation will drive the creation of new cross-cutting value chains, which will bring new employments and economic revenues to Europe. We are demonstrating that creating jobs and wealth while tackling the societal challenges is possible!



<sup>2</sup> Ronzon et al. (2017). "Research Brief: Estimating jobs and wealth in the Bioeconomy". European Commission -Joint Research Centre.



## SPREADING THE WORD: KARMA2020'S PARTICIPATION IN ECOMONDO AND A NEW ARTICLE JUST PUBLISHED

KaRMA2020 was presented in ECOMONDO, the leading Euro-Mediterranean area green and circular economy expo, which was held in Rimini (Italy) from 6th to 9th November, 2018.

The project features were outlined in a speech given during the session "The new frontiers of Recycling for Circular Economy – Innovative Technologies and Materials" taken place on November 6. The discussion focused on new recycling fields for materials providing examples of advanced technologies for the treatment and recycling of particular categories of waste. The attendees were very interested in the KaRMA2020 session and they also had the opportunity to visit the project poster session organized in the CIAOTECH booth in the bioeconomy sector of ECOMONDO.

This international event gathered more than 116.000 participants and 1.250 companies.



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For more info about the project visit the KaRMA2020 website at [www.karma2020.eu](http://www.karma2020.eu)  
or contact us: Project Coordinator Sarah Montes, [smontes@cidetec.es](mailto:smontes@cidetec.es)



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