



LIFE15 ENV/ES/000658 LIFE-ECOTEX

FINAL NEWSLETTER: 2018

CIRCULAR ECONOMY APPLIED TO TEXTILE WASTE OF POLYESTER NATURE



PARTNERS



GAIKER Technology Centre, referent in recycling technologies.



CTCR. Footwear Technology Centre of La Rioja, expert in footwear technologies.



BETA RENEWABLE GROUP S.A., sustainable energy operator.



EKO-REC Ecología, Reciclaje y Medio Ambiente, S.L., manufacturer of synthetic textile fibres.



LOGROTEX, manufacturer of non-woven textile products.

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ACTIONS



Production of high-quality Ecotex BHET



High-Purity BHET ≥90% by weight
Small % of oligomers

After performing the resonance analysis of several samples produced by PET degradation at Gaiker's facilities, it is confirmed that the BHET obtained has a high purity ≥90 % by weight and, in addition, the % of oligomers is very small. The results have been contrasted and validated with the updated data of large PET synthesis companies, complying to the maximum with the requirements and quality standards.

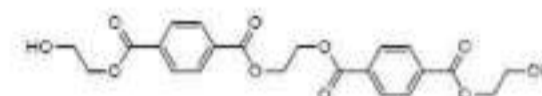
EG



BHET



Oligomer



The University of the Basque Country wins the public tender for the synthesis of 300 kg of PET

After the launch of the public tender (dated 20/04/2018) for the subcontracting of the process of the synthesis and production of PET pellets by means of the polymerization of the monomer BHET, the University of the Basque Country obtains the most positive evaluation in this respect. Once numerous proposals had been received, the candidacy of UPV-EHU was objectively evaluated, consolidating the agreement after signing the collaboration contract for the production and characterisation of the PET obtained.



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Synthesizing of over 300 kg of chemically recycled Ecotex PET

The synthesis of Ecotex PET was carried out in a pilot plant reactor, as shown below, by mixing BHET monomer, ethylene glycol (EG) and water under vacuum, all at high temperatures.



Reactor for the production of Ecotex PET

The reaction was stopped taking into account the viscosity of the melted product finally obtained. This mass was cooled with cold water, obtaining long threads, which were cut and sieved until obtaining the desired result, the chips or pellets.



Chips or pellets obtained from Ecotex PET after the synthesis reaction

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Manufacture of around 800 kg of chemically recycled polyester staple fibre (Ecotex PSF)

After receiving the polymerized pellets thanks to the 'Materials+Technology' Group of the UPV-EHU, Eko-REC carried out the preparation of the material, mixing it with recycled multicoloured flakes from bottles. This allowed the production of around 800kg of black polyester staple fibre. After that, Logrotex took over the manufacture of the felts, which will make up the insoles and thermal insulators.



Follow-up meeting in Andoáin (Eko-REC)

On 31/05/2018, the third follow-up meeting of the LIFE-ECOTEX Project was held at the Eko-REC facilities with the attendance of all the project partners: GAIKER (leader), CTCR, BETA, Eko-REC and LOGROTEX. During the meeting, the progress of the project was presented, mainly focused on the success in obtaining 350kg of BHET and the quality control analyses carried out on all the samples obtained after the process of glycolysis and purification of BHET. Moreover, the offer for the contracting of the monomer polymerization has been made public.



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Follow-up meeting held in Logroño (LOGROTEX)

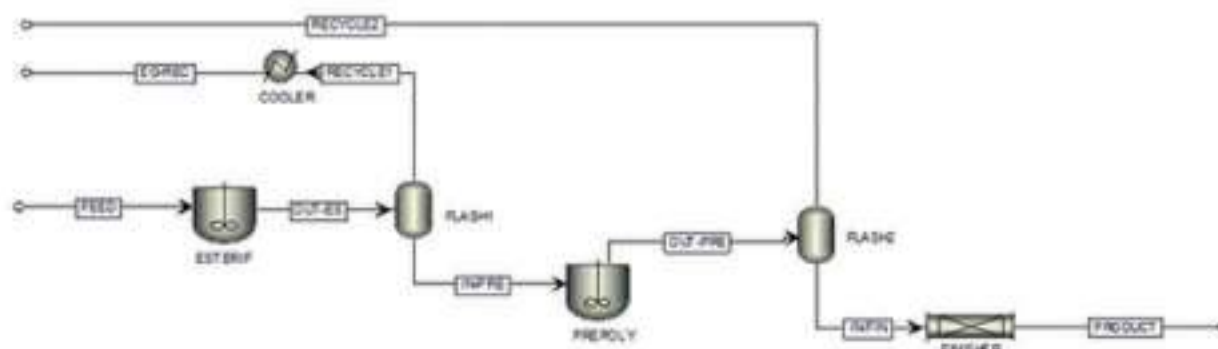


On 6/11/2018 the fourth follow-up meeting of the LIFE-ECOTEX Project was held at the LOGROTEX facilities with the attendance of all the project partners: GAIKER (leader), CTCR, BETA, Eko-REC and LOGROTEX. During the meeting, the project progress was presented, mainly focused on the success of obtaining 300kg of chemically recycled PET fibre, as one of the main objectives to be able to close the life cycle of polyester waste generated in the footwear sector. Likewise, the updated studies for the design of a chemical recycling industrial plant and the advances in the LCA on the chemical recycling process were presented.

Design of industrial plant for 20.000 t/year



This action contemplated the simulation of the design for the industrial plant through Aspen Plus® software, considering two possible routes: esterification reaction and direct BHET polymerization.





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LIFE-ECOTEX in CONAMA 2018

The National Congress of Environment, #CONAMA2018, was one of the events selected for the dissemination of the LIFE-ECOTEX project thanks to the participation of Eko-REC and GAIKER, through a written technical communication and a poster, which was displayed during the celebration of the event. Through this action, the agents involved demonstrated their support and commitment to the ecological transition #Rumbo2030, for a more sustainable sector.



CONAMA 2018 CONGRESO NACIONAL DE MEDIO AMBIENTE
RUMBO 20.30.





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NETWORKING actions:

Great interest in the project among the agents involved in the polyester value chain

During 2018 several networking actions were carried out with different entities. Among them:

AIMPLAS: Technological Institute for Plastics, Valencia.

ECOEMBES: Spanish environmental non-profit organisation that fosters the sustainability and the environmental protection.

SAMSONITE: manufacturer and supplier of suitcases, bags, etc., interested in recycled textiles for its products.

INDORAMA VENTURES QUÍMICA: multinational manufacturer of polyester.

CEPSA: global energy and petrochemical company.

GRUPO SYNTHESIA: manufacturer of polyols as raw material for the polyurethane industry.

PLASTICSEUROPE: business association that encompasses the most important polymer manufacturers in Europe.

CALZADOS ZELS: manufacturer of footwear interested in circular economy and sustainable materials for the new collection "Fabiolas No Trace".



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GRUPO COPO: foam and polyester textiles manufacturer.

TEXTIL SANTANDERINA: manufacturer of polyester textiles.

AVEP: Valencian Association of Plastics Entrepreneurs.

TEXAID: association focused on the circular economy for clothes and textiles.

REPSOL: global energy and petrochemical company.

COOLREC: dutch association for the recycling of electronic components.

LAYNA: waste management company.

ASHLAND y EURORESIN: chemical company that manufactures unsaturated resins of polyester.



BOLETIN FINAL: 2018

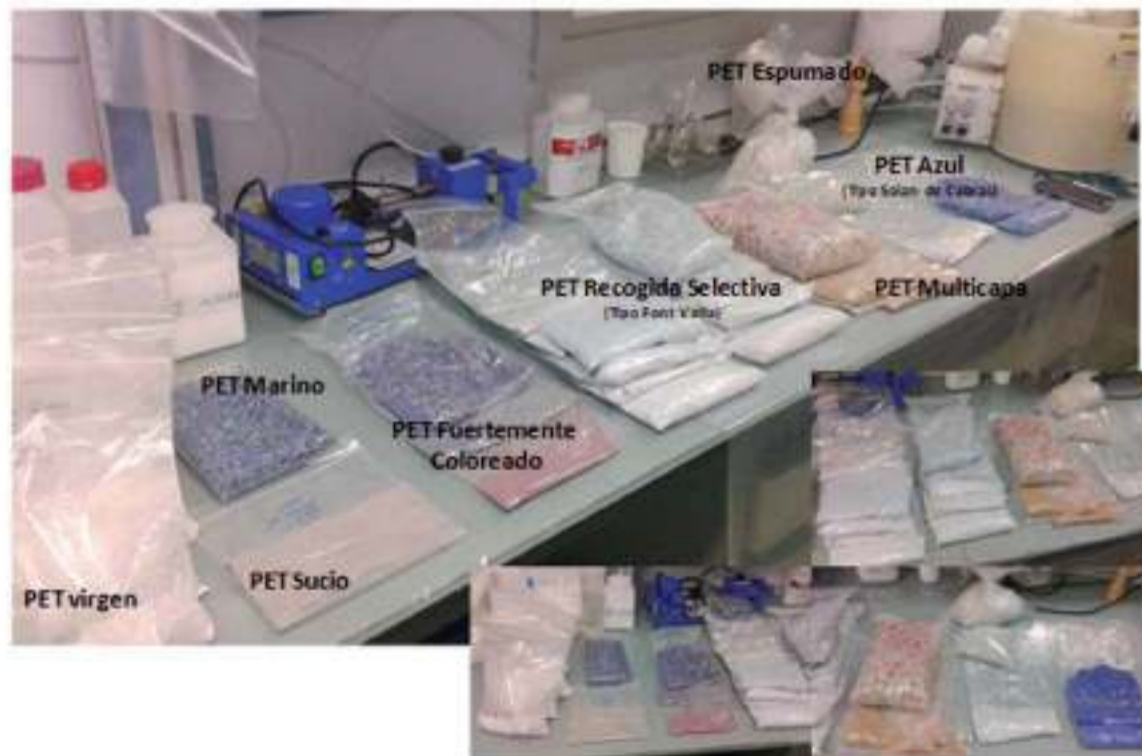
ECONOMÍA CIRCULAR APLICADA A RESIDUOS TEXTILES DE NATURALEZA POLIÉSTER

ACCIONES



Replicabilidad y transferibilidad

LIFE-ECOTEX siguiendo las directrices de la CE, sigue trabajando en las estrategias de replicabilidad fijadas en el proyecto. Destacan las pruebas realizadas con los residuos de PET procedentes de los sectores automoción y envase.





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SOCIAL NETWORKS

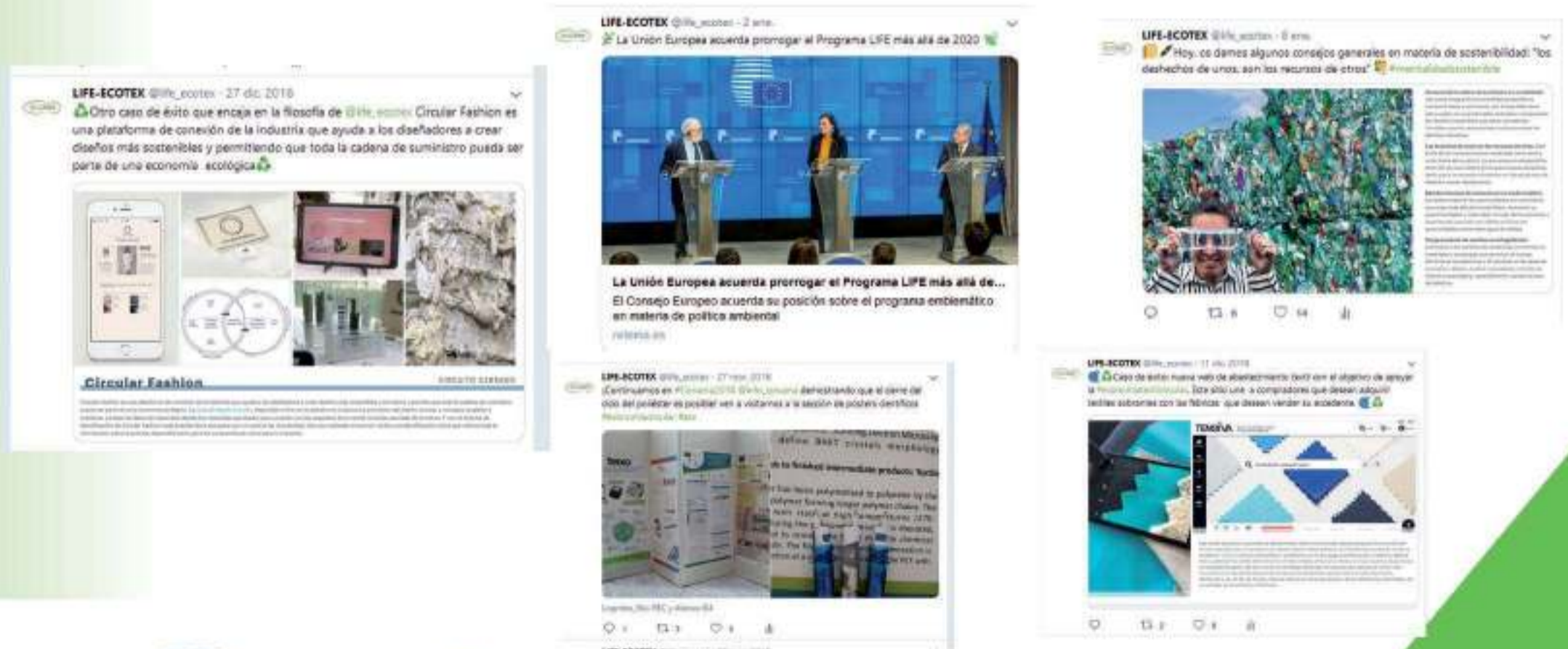
The LIFE-ECOTEX project currently has a profile on **TWITTER** and a group on **LINKEDIN**, which are in continuous operation.

The **aim** of these social networks is to contribute to the dissemination of the project through the frequent publication of the evolution and results achieved during its development, as well as debate topics and news related to the sector.



@life_ecotex

Below some of the last **published tweets** in our profile:





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Contact:
www.life-ecotex.eu

