

Volumen de material a reciclar

Si suponemos un valor medio de aerogeneradores a reciclar del orden de 2 GW al año y suponiendo una potencia media de 2MW de aerogenerador individual tendríamos 1000 AEG por año.

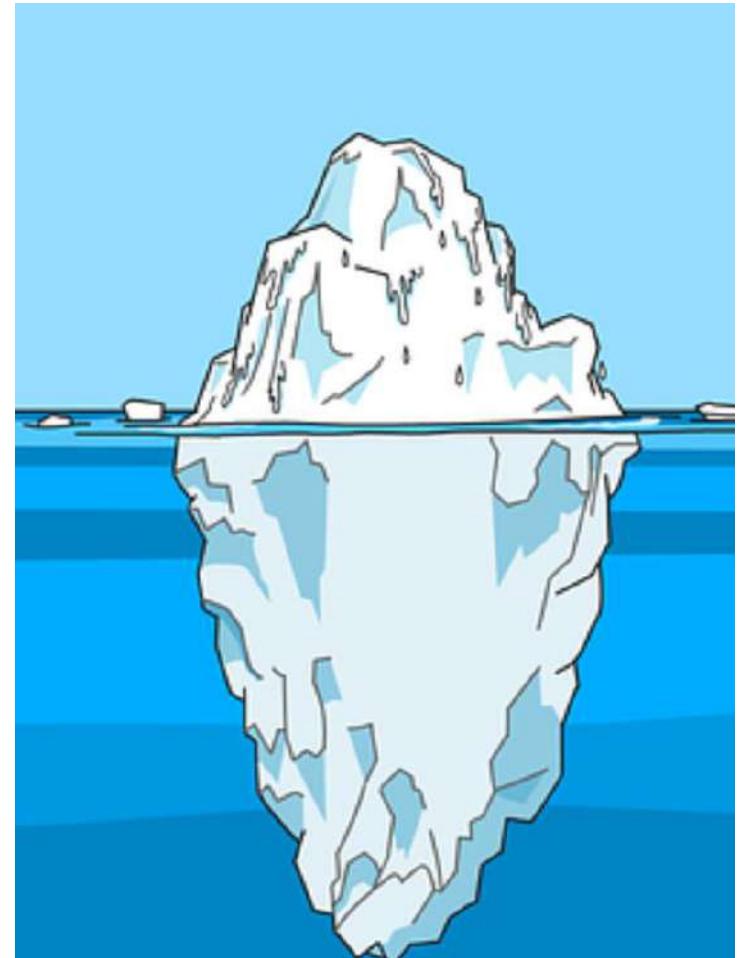
3000 palas a reciclar con un peso medio de unas 7 toneladas nos daría aproximadamente 21000 toneladas de material a tratar.

¿ES MUCHO O POCO?

En España se reciclaron 1.5 millones de toneladas de envases en 2019 y la tasa de reciclaje está alrededor del 50% (objetivo de la UE), eso quiere decir que otro millón y medio de toneladas se enviaron a vertederos o se incineraron.

El peso de todas las palas a reciclar durante un año representa solo el 1.4% del peso de los envases no reciclados.

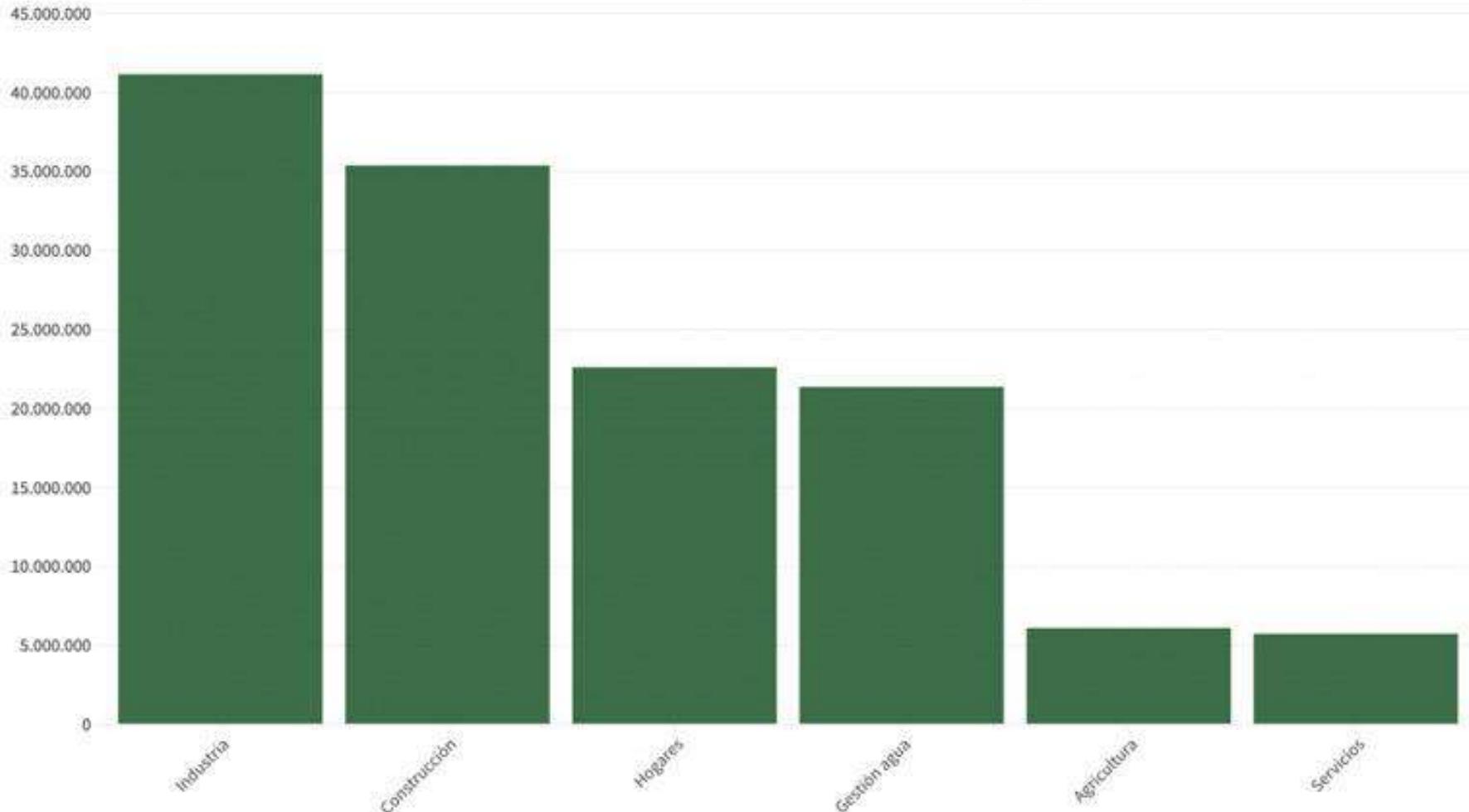
Las empresas del sector eólico están decididas a contribuir a que ese pequeño porcentaje pueda ser reciclado y contribuir de esa manera a la economía circular



Volumen de residuos en España (2017)

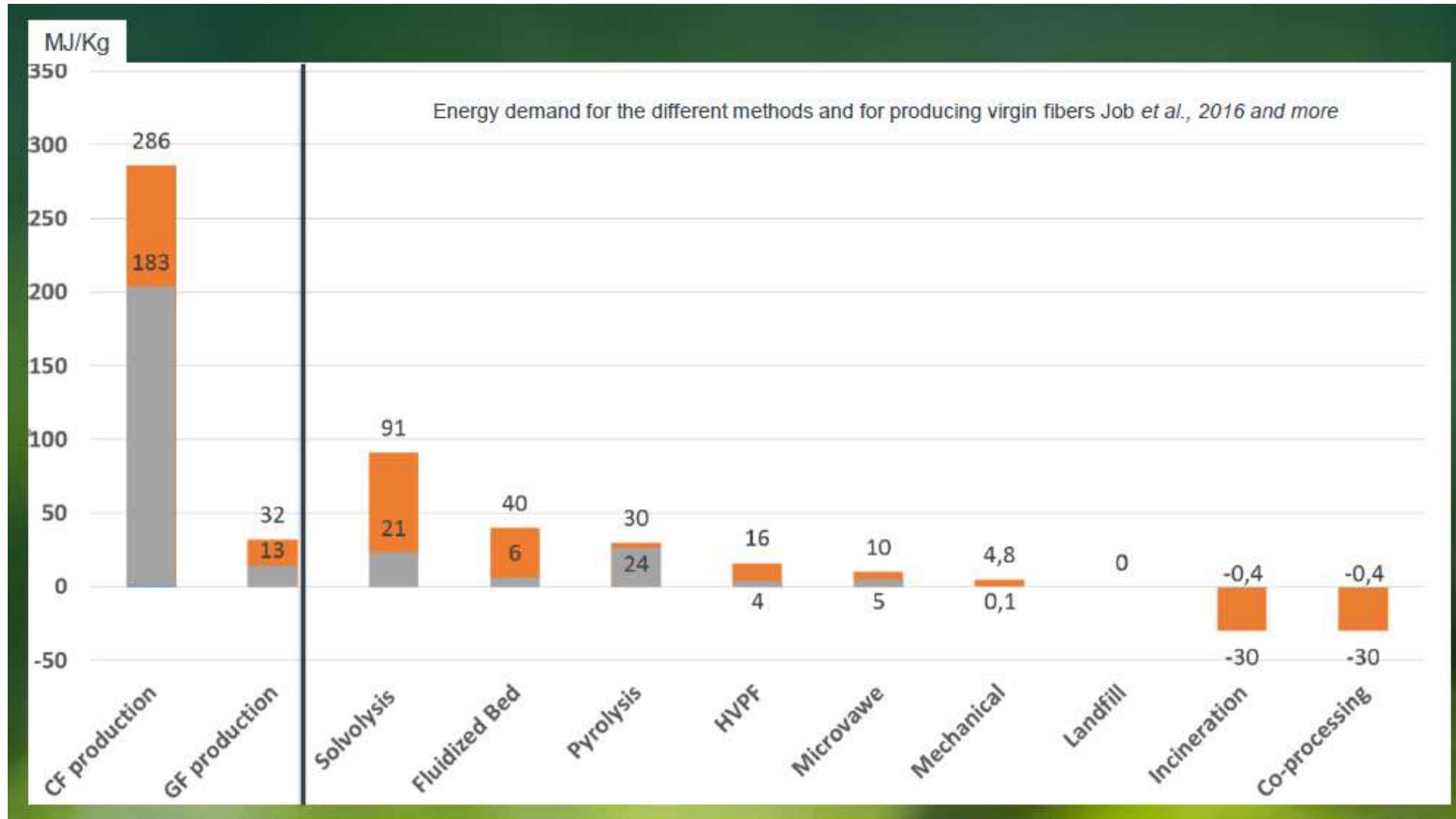
Toneladas de residuos generados según sector de actividad (2017)

El 53,9% de todos los residuos de 2017 (131 millones de toneladas) fue a parar a vertederos



Fuente: INE, Europa Press

Demanda energética en la obtención de fibras



DecomBlades consortium awarded funding for a large, cross-sector wind turbine blade recycling project

DecomBlades partners



Siemens Gamesa is a global leader in the wind power industry, with a strong presence in offshore, onshore and service. Siemens Gamesa will add value to the project by applying its knowledge about blade structure and design, market expectations and promotion of circularity in the wind sector.



As the world's largest wind energy OEM, Vestas brings an extensive level of expertise around the composition and manufacture of turbine blades. Vestas contributes a broad spectrum of knowledge on the expected lifetime of a blade, its production volume, and on assessing the potential for recyclability.



LM Wind Power – a GE Renewable Energy business is a world leading blade designer and manufacturer, with more than 228,000 blades produced since 1978 corresponding to 113GW installed capacity. LM Wind Power will lead the work to establish product disposal specifications, supporting new business models for blade recycling solutions.



Ørsted is the world's largest owner and developer of offshore wind farms with more than 6,000 employees globally. For Ørsted it is important that there exist sustainable recycling solutions for all parts of our wind farms. Therefore, Ørsted will take the role as project lead in DecomBlades.



ØHJHANSEN Recycling will be lead on the work regarding the common prerequisite for all three technologies: Pre-processing (cutting of blades), transportation to recycling facilities and solutions on shredding and sorting of the blade materials.



MAKEEN Power has developed a technology that enables conversion of plastic waste to a useful resource. MAKEEN Power's role in the project consists of designing and building the pilot pyrolysis facility to recover and reuse the blade materials.



Wind turbine blade

Manufacture
and deployment



Wind farm

Blade
end-of-life



Blade shredding
and transport



Pyrolysis



Co-processing



Recycling materials
into new products



Energy Cluster Denmark is the Danish innovation cluster for the entire energy sector. Energy Cluster Denmark will disseminate project results and develop new research and development projects based on the opportunities emerging in DecomBlades.



University of Southern Denmark, SDU, will conduct environmental and economic performance assessments of the different supply chains and apply a cutting edge hybrid assessment frame based on value chain analysis, life cycle assessment, material flow analysis and multi-criteria decision support.



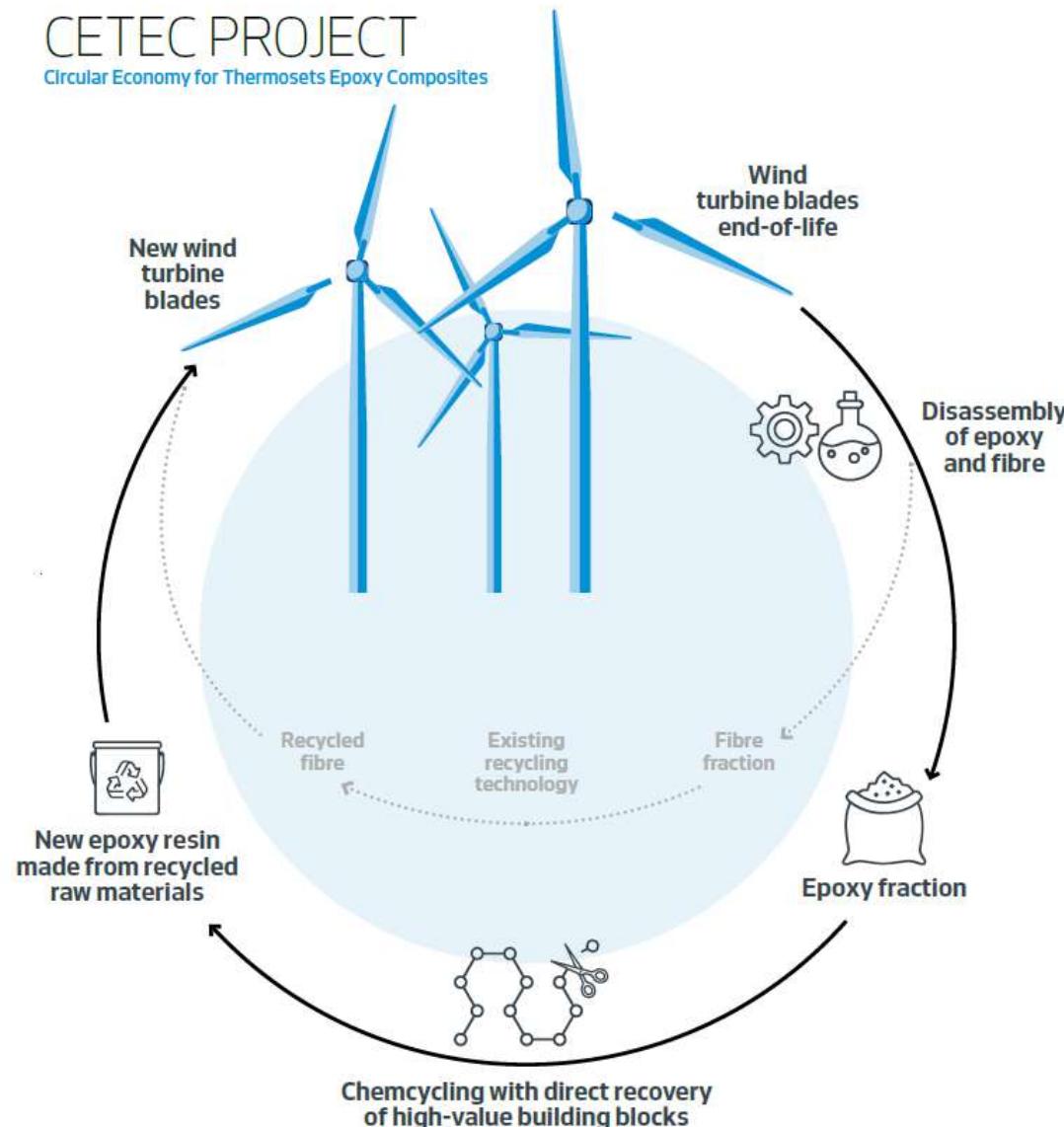
Technical University of Denmark, DTU, will contribute within the fields of material characterization, engineering, assessment of material properties of reused glass fibers, surface properties and investigate the possibilities of increasing the quality and value of fibers obtained from pyrolysis.



This work is partly funded by the Innovation Fund Denmark (IFD).

CETEC PROJECT

Circular Economy for Thermosets Epoxy Composites



Partners



DANISH
TECHNOLOGICAL
INSTITUTE

Danish Technological Institute (DTI) is an independent research and development institute. Based on knowledge and experience from prior work with composite disassembly technologies, DTI will drive the development and scaling of best-fit strategies that enables disassembly and re-use of composite components at end-of-life.



AARHUS
UNIVERSITY

Aarhus University is a globally oriented, academically diverse and research-intensive university. With the sustainability of polymer-based materials being a crucial challenge to society, Aarhus University takes part in the CETEC project as developer of a chemcycling process for epoxy materials.



With more than 8,000 employees globally and nearly 130 years in business, Olin is the largest back-integrated Epoxy supplier worldwide. Our Epoxy resins, novolac resins, curing agents, and our AIRSTONE™ and LITESTONE™ system lines enhance product performance in wind energy and other applications. As the leading producer of Epoxy material for the wind industry, we provide our technological expertise to CETEC in the development of circularity-enabling technologies. These innovations will further increase the efficient use of resources and advance the fundamentals of sustainability.



Vestas is the energy industry's global partner on sustainable energy solutions and with more than 136 GW of wind turbines in 84 countries, we have installed more wind power than anyone else. With our industry-leading ambition to build zero-waste wind turbines by 2040, we will drive the commercialization and implementation of the circular economy technology developed in the CETEC project.



This work is partly funded by the Innovation Fund Denmark (IFD).