

Wind turbine blades for oil refining

How are wind turbine rotor blades made?

The manufacturing of wind turbine rotor blades can be done using two different technologies: vacuum infusion and the so-called 'prepreg' process. The use of vacuum infusion is more frequent, representing about 65% of wind energy installations in Europe (162,087 t), while prepreg is used in the remaining 35% (87,278 t).

How are wind turbine blades recycled?

The recycling is carried out by low energy solvolysis. This resin is used in the first in the world recyclable wind turbine blade, manufactured by Siemens Gamesa in 2020. Vitrimers represent another promising resin group for recyclable wind turbine blades.

Can a real wind turbine blade be used as a refinery feedstock?

The aim is therefore to investigate if it is possible to develop a general process that can accept all material constituents in a real wind turbine blade, resulting in recycled glass fibers and a hydrocarbon fraction that can be used as a refinery feedstock. 1. Introduction

What can be used to make renewable wind turbine blades?

For the development of new generation of recyclable wind turbine blades, several potential candidate resins are explored now, for instance, thermoplastics (e.g., Ellium), and recyclable thermosets, with varied additives and hardeners.

What makes a wind turbine blade a good choice?

We invite you to read: "The Aerodynamics of Efficiency: Innovations in Wind Turbine Design" Fiberglass composites, a combination of glass fibers and a polymer matrix, have been instrumental in the evolution of wind turbine blades. They offer a remarkable balance of strength and flexibility, making them an ideal choice for blade construction.

Can pyrolytic recycling of decommissioned wind turbine blades be a solution?

Thus, pyrolytic recycling of decommissioned wind turbine blades would become a solution not only for their disposal but also for the recovery of high-value products (i.e., upcycling of decommissioned wind turbine blades).

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