

We make wind energy even more sustainable

Effect: resources / efficiency | Megatrend: sustainability / renewable energy

SUSTAINABLE AND EFFICIENT WIND POWER

The wind energy market will still grow at an above average rate around the world for the next decade. It will be driven by pro-environmental regulations, as well as by a change towards off-shore equipment installed. While off-shore wind turbines provide a higher yield on energy, the demands on the materials used will increase e.g. through salt water and winds. Evonik provides special and tailor-made additives like AEROSIL® fumed silica and Dynasylan® organofunctional silanes to meet these special requirements.



Thanks to Evonik, the length of rotor blades increases sustainability and boosts efficiency and reliability

EVONIK GIVES WINGS TO WIND POWER

There is increasing demand for lightweight materials in wind turbine rotor blades, as the length of rotor blades is increasing. AEROSIL® silica are very effective thixotropes for high viscous adhesives (bonding pastes) to optimize rheology and to guarantee stability of rotor blade adhesives during processing. In surface coatings, it supports good opacity of lacquers and improves scratch resistance, which is very important in off-shore installations to withstand a harsh environment. Blade lifetime is another critical factor. Dynasylan® coupling agents give long-lasting connections between glass fiber mats and the resin, thus optimizing the stability of the composite. They also improve adhesion, minimize moisture sensitivity and protect glass fibers from damage.

BENEFICIAL RENEWABLE ENERGY

Wind energy is offering global huge benefits over conventional techniques of generating electricity:

- Wind energy is renewable, and its resource, the wind, is free and almost unlimited available
- No raw material costs and disposal costs involved
- Less dependency on oil, gas, and foreign reserves
- Modular design of wind turbines eases building big wind blades, and increases overall system capacity / reliability while keeping weight and costs low
- Wind turbine installations are relatively quick:
 - 1.0 MW to 2.5 MW facilities can be completed in two months
 - 50 MW wind facilities can be installed in 18 months

WITH A FRESH BREEZE INTO THE FUTURE

Worldwide, environmental protection and sustainable development are top priorities. Therefore, it is necessary to bring a fresh breeze into the future of renewable energy as requests for energy systems are enabling a greater and more efficient use while having less impact on the environment and contribute to the diversity, security and sustainability of supply. Wind energy is nonpolluting and highly efficient. The future of the wind energy industry will see bigger blades and increase the average turbine capacity (expectation is from 2 MW to 5.5 MW), also enabled by Evonik product portfolio.

Resources ↓ Longevity ↑ Maintenance ↓

