

FOR IMMEDIATE RELEASE

Contact:

Ed Mahoney

AGY – Europe

+33.4.72.78.1777

Ed.Mahoney@agy.com

**Study Finds AGY ZenTron® High Performance Roving
Reduces Mass Up to 25 Percent in Wind Blade Spar Applications**

PARIS, FRANCE, April 3, 2007 – A study commissioned by AGY, the world's leading producer of high performance glass fiber, found that the company's ZenTron® roving should produce up to 25 percent mass reduction in the unidirectional spar cap and trailing edge components of wind turbine blades, for up to 11 percent total blade mass reduction in 62.5 meter blades compared to standard E-glass.

The study was commissioned through KC-WMC (Knowledge Centre - Wind Turbine Materials and Constructions, Holland), and unidirectional spar material was modified to include various fibers. *ZenTron* roving was used as an alternative to E-glass and carbon. To provide accurate input for the design process, AGY commissioned the Compositec composite materials resource center in France to generate composite data regarding the mechanical performance of a vacuum infused unidirectional *ZenTron* roving in NCF epoxy composite.

“Our objective was to demonstrate that AGY *ZenTron* roving could fit into the cost/performance model of material selection for wind turbine applications,” said Ed Mahoney, New Business Development Manager, AGY Europe.

“The results show that *ZenTron* roving can give wind turbine designers an option to replace or retrofit E-glass spar structures on current blades with a stiffer material, therefore enabling longer blades to be manufactured for the same weight as their current E-glass blade,” continued Mahoney. “This gives them the potential to extract more power from an existing turbine.”

Mahoney said the reduction in blade weight with *ZenTron* roving was primarily achieved from its 28 percent higher stiffness-to-weight ratio compared to E-glass fiber. This is based on the principle design criteria of achieving tip deflection, static strength and fatigue strength allowable.

- more -

ZenTron® Roving Reduces Mass in Wind Blade Applications – Page 2

The glass fiber reinforced unidirectional laminates in the structure were shown to have significant margin on strength (and strain), with axial strains less than 0.4 percent at maximum wind loading. The study was performed on a 5.5 megawatt offshore turbine having cut-in and cut-out wind speeds of 3 and 27 m/s, respectively.

Current state-of-the-art blades for 3 megawatt turbines are around 50 meters in length and are reported to be reaching the limit of designs possible with E-glass fibers in the spar cap. *ZenTron* roving provides wind turbine designers a viable material solution for deflection control on blade lengths over 50 meters. *ZenTron* roving is also considered an alternative to carbon fibers, which although providing significant improvements in stiffness and density over glass fibers, have intrinsic problems of fiber straightness, compression performance, wet-out for optimal composite performance and, of course, cost and availability.

There is currently a trend to longer blades for wind turbines, but increased length also brings new challenges to be overcome. For example, longer rotors require more mass for the greater lengths and increased cross-sectional thickness to resist the higher bending loads from wind and rotational inertia. For turbine blades limited by tip deflection, the blades require greater bending rigidity to prevent hitting the back tower at the highest wind speeds.

AGY is best known as the manufacturer of high performance S-2 Glass® yarn and roving. *S-2 Glass* products exhibit significant property improvements over standard E-glass fibers including greater strength, stiffness, fatigue and impact resistance, radar transparency and temperature resistance.

To provide the performance of S Glass in industrial applications, AGY developed *ZenTron* high performance single end glass roving based on S Glass with new developments in size chemistry for optimal matrix compatibility and excellent composite performance. *ZenTron* single end roving is available for immediate worldwide shipment in production volumes from AGY locations in North America and Europe.

AGY is a leading global producer of fiberglass yarns and high strength fiberglass reinforcements used in a wide variety of composites applications. Headquartered in Aiken, S.C. (USA), AGY has a European office in Lyon, France, and manufacturing facilities in Aiken, S.C., and Huntingdon, Pa. Additional information may be found at the company's website, www.agy.com, or by email at info@agy.com.

###