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For Immediate Release

Magneti Marelli and Flybrid Systems to collaborate on KERS energy storage for Motorsport

Italian Motorsport electronics specialist Magneti Marelli and British high-speed flywheel specialists Flybrid Systems today announce the collaboration to develop a new energy storage solution for the Kinetic Energy Recovery System (KERS). The new product will deliver a high power electrical storage system for hybrid racing cars capable of deep depths of discharge with no performance degradation and a long service life.

The new product named *Flywheel Capacitor* consists of a high-speed carbon fibre flywheel incorporating *Flybrid*® technology connected to a high-speed electric motor generator using technology from Magneti Marelli, all managed by Magneti Marelli's control electronics.

The device works by applying to the electric motor generator the recovered electrical energy captured from the vehicle during braking events. The energy is stored into the *Flywheel Capacitor* by speeding up the flywheel. During the acceleration events of the vehicle, the energy stored into the flywheel capacitor is returned to the vehicle by transforming the kinetic energy of the flywheel into electrical energy via the motor generator.

The Flywheel capacitor will not use chemical battery based energy storage systems.

The first *Flywheel Capacitor* to be developed will have a specification of 60 kW power and 600 kJ total storage capacity but the specification can be readily adapted to any vehicle requirements. Both partners will draw upon extensive experience with their own KERS products to deliver a working prototype in the next few months.

The electric motor and flywheel will rotate at up to 60,000 RPM and the flywheel will sit inside an evacuated chamber that includes special containment features to ensure complete safety. A small electric pump will occasionally top up the vacuum so that no regular maintenance is required.

State of the art magnetic design of the motor generator and high efficiency electronics are expected to deliver round trip storage efficiencies approaching 80%. The device has a low cooling requirement and contains no flammable materials. The complete flywheel capacitor including the associated electronics is expected to weigh just 20 kg.

Commenting on the collaboration Flybrid Systems Managing Partner Jon Hilton said “This is an exciting new development that will deliver a high end product capable of exploitation in F1 but also suitable for more widespread use in motorsport. As well as offering low running costs the flywheel capacitor is a green alternative to regularly replacing batteries.”

Managing Director of Magneti Marelli Motorsport Roberto Dalla said: “We are very excited to apply our technology and our deep experience in developing KERS solutions to create an alternative energy storage system. This project lies within our strategy of continuous innovation and research for efficiency and performance”.

The new flywheel capacitor product will be commercially available from both Magneti Marelli and Flybrid Systems. Both companies will continue to develop, manufacture and distribute their own existing KERS products.

Magneti Marelli *designs and produces advanced systems and components for the automotive industry. With its 67 production facilities (80 production units), 10 R&D centres and 28 application centres in 18 countries, 33,000 employees and a turnover of 5.4 billion Euros in 2008, the group supplies all the leading carmakers in Europe, North and South America and the Far East. Its business areas include: Powertrain, Lighting, Electronic Systems, Suspensions and Shock absorber systems, Exhaust Systems, Aftermarket Parts & Services, Plastic Components and Modules, Motorsport. Magneti Marelli is part of Fiat Group.*

Flybrid Systems *designs, develops and manufactures high-speed flywheel based kinetic energy recovery systems. From its Silverstone factory the privately owned company supports hybrid vehicle development programmes with racing teams, fleet operators and OEM vehicle makers.*