ALTERNATIVE ENERGY

FIM Alternative Energy Newsletter

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"Forward" by Robert Rasor, FIM AEWG Chairman

As we begin the final months of 2010, we are looking back on three years of exploration by the FIM of alternative energies and their applications to transportation, environment and motorcycle sport. The motorcycle has proven to be the ideal platform for the testing and application of these technologies, and the advances in recent months have been exciting and rapid. In the coming months, the FIM through the work of its Alternative Energy Working Group will continue to lead the adaptation of these emerging technologies for the benefit of all users.

The FIM has come a long way from brainstorming the idea of electric motorcycle racing to witnessing some striking progress on the race tracks during the FIM e-Power International Championship. The FIM is proving that clean motorcycles have a huge potential, and it shall continue to do so. It is now up to manufacturers and decision-makers to take this potential built on the tracks and bring it on to the roads.

Robert Rasor, FIM Vice-President, FIM AEWG Chairman

FIM e-Power International Championship series heats up at Laguna Seca

On 28 July, motorcycling fans experienced the 3rd race of the 2010 FIM e-Power series, the first International Championship open to electric-powered motorcycles. After Le Mans (France) and Albacete (Spain), this 3rd race took place in Laguna Seca (USA) and saw the victory of Michael Czysz, who beat Michael Barnes just a few metres before crossing the finish line after an exciting competition, the FIM reports.

12 teams came to Laguna Seca full of hope before the 3rd race of the e-Power series. However, after the qualifying round, only 8 teams managed to line up their bikes on the starting grid, with a mix of experienced teams and new prototypes. Starting in 2nd place, Michael Czycz, on his MotoCzysz E1pc, experienced a bad start and let Michael Barnes (on his Lightning) and the Belgian Thijs de Ridder (on his DR-M. PROTO1) run away for a few seconds. Being nearly 10 seconds behind the Lightning at the halfway mark of the 9-lap race, Michael Czysz made an impressive comeback on Michael Barnes, whose Lightning was slowly running out of power on the last hundred metres, to win the race by 1.238 seconds. Thijs de Ridder finished third, ahead of the group led by Italians Thomas & Luciano Betti, followed by the German Matthias Himmelmann.

From this race, one can say that Electric Motorcycle sport is still at an early development stage. The e-Power series is a match "between enterprises attempting to harness emerging technology, and doing so with widely varying budgets, levels of engineering proficiency and expertise"[1]. But this 3rd race shows the potential of electric power for motorcycles. With only 1.2 seconds between the winner and second place, and a great battle for 3rd and 4th place between 4 riders, there was much to see for the crowd of 51,000 spectators – many of whom had come to watch the MotoGP race. The audience certainly noticed one of the main characteristics of the e-Power race: they are almost silent! This simple fact opens a lot of perspective for motorcycling sport, for which noise is one of the major issues.

[1] Source : www.motorcycle.com

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The potential for performance is also evident. The teams may be little experienced, understaffed and with very limited budget compared to their carbon-emitting counterparts, but with top speeds over 185 km/h, these e-bikes have proven their ability. In only a few months' time, these bikes have experienced big improvements in their performance. What if major manufacturers were to enter the competition?

The FIM e-Power Regulations leave much room for innovation, without compromising safety. This relative freedom has allowed teams to follow different paths: while MotoCzycz chose to build a heavy and powerful bike, Lightning went for a light machine with less battery volume. With limited battery technology, strategy is also crucial. Riders need to know how fast they can go to make sure they have enough power at the end of the race. At the end of the race, Michael Barnes admitted his "strategy was to take off and try to build a lead. His [Michael Czysz's] strategy was most likely to conserve and get me at the end."

Despite being the youngest of FIM World Championships, the e-Power Series complies with the highest of FIM standards. The e-Power races are held on FIM homologated circuits, using high safety standards as required for the FIM World Championships. Riders must be holders of a valid 2010 FIM World Championship licence. In order to contribute to the development of this sport and with the view to encourage small teams to get involved in the e-Power Series, the FIM provides riders with a participation allowance of 1000 Euros for each of the races. The next event of the FIM e-Power Series will be held in Magny-Cours (France) and Imola (Italy).

Source: FIM

NEWS from Brussels

The European Strategy for Clean Vehicles – next steps

On 29 June, two months after tabling its "European Strategy on Clean and Energy Efficient Vehicles", the Vice-President of the European Commission Antonio Tajani gave European standardisation organisations a mandate to develop a common charging system for electric vehicles.

Three bodies, the European Committee for Standardisation (CEN), the European Committee for Electrotechnical Standardisation (CENELEC) and the European Telecommunications Standards Institute (ETSI), are to put together a new standard that ensures that all types of electric cars, scooters and bicycles can be safely charged across all 27 EU member states. The idea is to make sure that all plugs and connectors use the same standard across the Union so that drivers can use the same plug independent of vehicle brand or country. The European Commission is also asking the bodies to consider "smart-charging" solutions, which would allow users to charge vehicles more cheaply at off-peak times, thus promoting energy savings.

In July, the European Commission announced that 30 million Euros will be allocated by the EU for selected research projects in the field of "ICT [Information & Communication Technologies] for fully electric vehicles". This is included in the 2nd phase of the European Green Cars Initiative of the 7th Research Framework Programme of the European Union. The major focus is on electric and hybrid vehicles. Research projects can be submitted until 2nd December.

For electric motorcycles and scooters, but also for other two- or three-wheelers powered with alternative sources of energy, the next step is the expected Commission's Proposal of a new European Motorcycle type-approval Framework Regulation, to be tabled in autumn. This piece of Legislation is expected to outline stringent CO2 emissions limits for powered-two-wheelers and to provide a legal framework for the development of adapted electric and fuel cells technologies.

Source: LOGOS Public Affairs

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NEWS from the Federations / Events

Scandinavians re-convene on the back of Eco Enduro success

Following the success of the FIM Ride Green Eco Enduro in December 2009, Nordic federations will meet in Denmark early October to decide on the next big Eco motorcycling event this Autumn/Winter. The federations have been recalling the success of the event, hosted by the Danish Motorcycle Union (DMU), and will no doubt seek to welcome new models and competitors at the next race. For three days in December, all eyes were on motorcycling sport as journalists, media, and COP15 Conference visitors watched electric motorcycles (silently) roaring around Copenhagen on occasion of the Climate Change FIM Ride Green Eco Enduro, while negotiations between leaders of this world were stalling.

The idea behind the FIM Ride Green Eco Enduro was to organise a race with electric off-road bikes to prove that racing with electric bikes is not an idealistic green dream, but a possible reality from today. The original idea from former Dakar Quad participant Ivan Reedtz-Thott, and motorsports journalist Søren Clauding, was supported by the DMU, Swiss manufacturer Quantya and the FIM. For the FIM and its alternative energy efforts, this proved to be a golden opportunity to land another stepping stone towards the practical application of green motorcycling.

The race received a positive response not only from the public, who were amazed to see noiseless electric motorcycles snaking through an Enduro track, but also the riders, who, though initially skeptical of the potential of their electric engines, were quick to confirm the feasibility of this new motorsport and to learn that the future was already within reach.

Source: FIM and LOGOS Public Affairs

NEWS from the Industry

New models and technology rise up to the energy challenge

Although already quietly under way during the past couple of years, the full advent of electric motorcycling sport seems to have no doubt arrived in 2010. In addition to the releases we expected from electric bike manufacturers in 2010, this year's electric racing competitions have also acted as a main stage for the introduction of some much-awaited e-bike models and innovative technology. Engineers and designers have been seizing on the opportunity of these competitions to test improvements on everything from providing longer battery life to slimmer frame design. Yet, as the name 'alternative energy' suggests, the developments of green motorcycling technology should not only be based on the experience and development of electric motorcycles alone. Rather, these should also be looked at against the backdrop of other alternative fuel advances. In this respect, the developments in diesel, bioethanol, and hydrogen fuel cell models have certainly not fallen behind.

Fuel efficiency steers diesel and biofuels back into the spotlight

The recent Track Diesel T-800 CDI (see picture) model, one of the latest diesel-run turbo bikes, is worthy of note. With a diesel engine consumption of just over 40 km/l, the T-800 runs on a 800-cc three-cylinder CDI Turbo Intercooler diesel engine, with 100-Nm torque and 45HP delivering a top speed of 185 km/h. The range for maximum performance is variable at 1800-2800rpm, with an RPM range of 850-4500, rear-wheel shaft drive, and a DEEP low inpack exhaust system. Dutch-based company Products BV originally started to sell the diesel motorcycle in 2009, although plans to make it available outside the Netherlands (previously expected for 2010) have been postponed until 2011.

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NATO forces take to diesel motorcycles

The M103OM1 – an adapted Kawasaki 650 single – is the modern military motorcycle. The machine was designed in the United Kingdom at Cranfield University as part of a research programme of the Royal Military College of Science. It is manufactured by the US company Hayes Diversified Technologies and runs on either diesel or JP8 aviation kerosene to comply with the NATO requirement of a "single fuel" for the battlefield, as required for all military vehicles. This Kawasaki has a top speed in excess of 130km/h. The fuel consumption figures are startling, cruising at a military pace of 55mph (88km/h) and at 50km/l.

There have been discussions concerning the release of a civilian model, but current demands from the military in both the US and Europe remains high and production of the civil version has been delayed. The fuel injection system used on this military motorcycle is simple. A more modern injection system would boost performance and economy even further.

On the biofuels front, the Honda CG 150 Titan Mix model launched in the Brazilian market in 2009 and the Cougar RED factory race team engineers in the UK have showed that linking clever ideas and new technology to push the boundaries in innovation and excellence in sport is more than possible.

Surely, however, all the hype surrounding the development of electric vehicles and subsequent investments in the field have done much to overshadow the development of motorcycles running on other fuels. The electric challenge has been sparking the interest of not only fully dedicated and well-known racing enthusiasts Zero, MotoCzysz, Mission Motors and Quantya, but it has also mobilized interesting and innovative efforts from individual design specialists, professional racers, and apprentices.

Moreover, the dedicated e-bike manufacturers have been working diligently on making improvements to their initial models, and this has no doubt borne its fruits. For instance, the new Brammo Empulse RR (picture, left) has surprised many critics for its features. Arguably, Brammo's latest electric sport bike seems to be not only more aesthetically pleasing than its inaugural Enertia model but also flexibly catered to users' preferences, available in three variants: the Empulse RR 6.0 runs at an average speed of 60 miles an hour (96 km/h), while the 8.0 version runs at 80 (128 km/h), and the 10.0 at 100 (160 km/h). Under many fans' expectations, the vehicle has yet to be tested on the electric racetrack - the last round of the e-Power Series at Laguna Seca was due to be its debut but failed to be the case due to engine problems at the start of the race.

No plug without a charger…

And while recharging a vehicle around a racetrack may require a few charging points along the pit stop, the roll-out of a complete charging infrastructure on public roads is indeed much more complicated than one might expect. To meet this challenge, battery and infrastructure providers are now teaming up with a number of private and public bodies to test the integration of charging points with the existing energy networks. In Europe, energy suppliers such as RWE, Enel, and EnBW, but also university institutes and technology start-ups, have been joining the effort in testing new technology aimed at improving electric vehicle and grid compatibility, safety, and communication. A recent initiative out of the Netherlands under the name of NRGSpot, for example, involving electricity supplier Eneco, Dutch start-up company Epyon Delft, and electric scooter producer Qwic, has been achieving improvements in the reloading speed of lithium-ion batteries and aims to provide a full operable network solution within the next two years. Similarly, Italian energy provider Enel is currently working with hybrid scooter producer Piaggio to test grid compatibility and solutions.

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As announced earlier in 2010 by the European Commission, and further to the numerous studies carried out by multi-stakeholder expert groups, the alternative fuel mix is likely to increase its share in the energy supply as fossil fuels slowly phase out. At the same time, experts predict a modest but stable increase in the evolution of each fuel. As such, change with regards to the way racing, sport, and transport is conducted is inevitable. In this vein, the FIM continues to foster innovation and development of alternative energy and has been very satisfied with the positive feedback it has received from its initiatives, such as the Eco Enduro race in Copenhagen last December. The FIM and its partners from the across the motorcycling community are committed to researching and supporting activities that contribute to meeting this challenge. By combining recreational values with technological expertise, Sport is proving that it also provides an effective platform for demonstrating the technology to wider audiences and changing perceptions to embrace new ways of thinking and sustainability of the sport. The FIM is glad to be a part of these developments and looks forward to working with all industry and sport stakeholders to continue to make achievements for cleaner motorcycling sport and better respect for the environment.

Source: LOGOS Public Affairs

AGENDA

- European Mobility Week, 16-22 September
- 4th e-Power International Championship race, 26 September, Imola, Italy
- Next meeting of the FIM Alternative Energy Working Group, 20 October

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