

UK's Electric Highway



Ecotricity's Wind Turbine



EV Charger

Where to Charge

Charge points will be located at "Welcome Break" service stations. Each post will be located outside the main entrance, with two sockets that can be accessed by registering for a free swipe card. EV's will be able to top-up in just 20 minutes using a (32A supply) rapid recharge points or fully charge in two hours; while those using a 13A supply can slow charge your EV overnight while staying at nearby motels.

Ecotricity, a British green energy producer is busy installing recharging stations for England's 2000 pure plug in electric EV's all over England. For the first time electric vehicles will be able to travel the length and breadth of Britain using the world's first national charging network at motorway service stations across the country. All charging locations will be powered with 100% green energy generated at Ecotricity's wind and solar sites across the UK, and means that electric car and motorcycle users will be able to drive from London to Edinburgh or Exeter completely free and with vastly reduced emissions.

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<http://www.ata.org.au/branches/geelong-ev-group/>



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Nemesis Specs

Top speed: Estimated 170mph
Speed 0-100mph: 8.5 seconds
Power: Two 125KW motors = 330 bhp
Power source:

96 x 100 A/h 4.2 V pouch lithium polymer cobalt cells

Range: About 100-150 miles
Depending on driving style

Length of charge:
Under 2 hours from empty to full with optional fast charger, 8-9 hours with 13A overnight charger

Charging:
240V 13A household socket or 64A three phase industrial supply

Emissions:
0g CO2 when charged with green electricity from Ecotricity

Battery container:
Patent pending double skin carbon fibre/ aluminium honeycomb SESS (Structural Energy Storage System)

Connection:
Rear three-pin plug fast charge retractable cable systems incorporated into bodywork

Kerb weight: 1166 kg

Height: 1202mm

Width: 1701mm

Length: 3816mm

Cost: Under £1M

Length of build: 18 months

Transmission: Two-stage belt driven reduction transaxle

Braking: AP Racing 4 pot front calipers

Styling Designer: Peter Stevens, designer of the McLaren F1 supercar



Nemesis
£1 million
supercar
EV

English company Ecotricity has designed and built the Nemesis a Lotus Exige based all electric plug-in supercar. This masterpiece of engineering gives more thrills than a regular sports car; especially as it has an impressive turbine type whine to accompany the exceptional (neck breaking) acceleration.

(<http://www.youtube.com/user/fullychargedshow#p/u/24/LfP1P-ohN-w>)

Ecotricity are a major green energy producer in the UK with Solar and Wind Farms that harness energy to provide customers with clean energy. Effectively the Nemesis is a wind powered sports car, as owner and CEO of Ecotricity - Dale Vince is charging the Nemesis from one of his companies wind turbines.

The technology developed for the Nemesis is to be incorporated into Ecotricity's next projects, a no-holds-barred 250mph+ wind-powered electric supercar, and an electric tractor to address the next big issue of how we feed ourselves post-oil.

Finally someone seriously into renewables at all levels.

MotoCzysz

Not to be outdone by a rather obnoxious rule change at last year's Isle of Mann electric TT race, limiting the bikes to 500lbs. Segway Racing MotoCzysz rebuilt their offerings and ran two E1PC bikes and came in 1st and 2nd



Not bad for a company that was not even considering running this year, yet managed to shave weight to under 500lbs, increased power to 200hp and upped top speed.

The E1PC set a new lap record of 99.604 mph, just a whisker short of claiming the £10,000 prize from the Isle of Mann council for the first electric bike to lap the 37 mile circuit at an average of 100mph.

To cap things off, the MotoCzysz was also the fastest through the speed traps, with a top speed of 149.5mph. Although when quizzed, rider Michael Rutter claimed that during testing the bike reached 170mph; and he was keeping top speed down to conserve battery power.

All up there were 5 EV competitors taking on the TT circuit with times from 22 min to 32 min per lap.

TMG EV P001



Following from last month's article on the Green Motorsport Endurance another Radical ZR8 sports car in EV trim has set yet another impressive EV record.

This time Toyota Motorsport Gmbh (TMG) has knocked more than a minute off the lap record for an electric vehicle (EV) at the 20.6km Nürburgring circuit. With a time of 7 minutes, 47.794 seconds, that's an average speed of 158.5kmh. The TMG EV P001 beat the previous record of 9 minutes 1.338 seconds set by a Peugeot EX1 in April.

To put those figures in perspective, a Porsche 911 GT3 or Ferrari 599 gets around Nürburgring in exactly the same time, so the Toyota EV is not slouching along.

TMG claims it will begin commercial sales of its EV technology in 2012, for a single make motor race series.

Now that is interesting. Some time ago it was reported that Bernie Ecclestone was proposing an all electric Formula 1 competition now, with Toyota, Peugeot and others of the big manufacturers producing EV racing beasts, it might just be true.

The P001 is powered by two "Axial Flux" electric motors manufactured by EVO electric driving the rear axle, a very similar configuration to racing green's ZR0.

Top speed is 260kmh – Power comes in at 280KW and torque 800nm at 5000rpm, weight is a very respectable 970kg with a sprint from 0 to 100kmh taking just 3.9sec.

The battery is a Lithium Ceramic(?) of 520volts, 41.5KWh weighing 350kg

A Different Shape of Things to Come??



Out of China comes a range of electric light aircraft, with the dual seat e430 being the top of the line. Cruise speed is 95kmh, range 2 hours on the standard 83.5kg Lithium Polymer battery pack of 135volts at 100Ah. Takeoff weight is just 430kg (empty 255kg) with a 19kg – 40KW brushless DC motor controlled by a 400A 3Ø system; recharge time is just 4 hours with the included fully automatic Yuneec E-Charger. What's even more interesting is that the power units are available as separate modular systems. Available in 4 different power outputs 10, 20, 40 and 60KW and 2 different speeds 2,000 and 2,400rpm. The power drive range consists of matched motors and controllers and matched battery and charger units. All parts of the Power Drive system simply plug together, with no need for any soldering or ancillary fabrication. Simply plug the motor into its matching power controller, attach the throttle system (different types available for various applications), plug the controller into the battery and the system is ready to run. It's that simple!!!

The largest, the 60Kw system, could be adapted for auto use fairly easily, although the speed is low at only 2400rpm an automatic transmission could come to the rescue. Weighing only 30kg the 60KW system has an amazing power to weight ratio.



This Month's Q&A Technology Tip



Q: I need to get a DC-DC converter for a 144V battery pack and only have a budget of \$300 to work with. Is there a device in this price range?

A: YES – if you can survive with a 40 amp output then the Meanwell SP-500-12 Power supply will work as a DC-DC converter for \$233.18 delivered to your door from Sonar Plus. It has the bonus of working on pack voltages from 120V to 370VDC

see <http://www.sonarplus.com> search for MEANWELL & look on page 3 of the results.