

Racing Green 26,000Km Extravaganza!

Specs

The SRZero's pedigree is quite impressive; firstly it's not a bad looking little thing with a can-am style body originally designed as an experimental class Le Mans car.

In electric form the SRZero has a 56kWh Thundersky LiFeP battery pack (166 cells-100Ah) supplying 550volts to the two 3 phase Evo-Electric motors that individually power the rear wheels. This feature eliminates the need for a differential (Speed variation when cornering is achieved via the National instruments based speed controller.)

Weight – 1200kg

0 to 100kmh – 7 sec

Recharge time – 6 hours

Range – 400Km +

Daily driving ranges varied from 150Km to over 700Km. On the longer runs the pack was fully charged overnight and run until 66% discharged then recharged 33% then run to maximum discharge – ready for a full overnight charge again.

Sounds a bit harsh but it worked for 26,000Km!!



SRZero

Imperial College London's environmental transport department (Imperial Racing Green) set out from Fairbanks Alaska on July 3rd 2010, in an all electric sports car, to travel the 26,000km trek down the Pan-America highway to Ushuaia Argentina. The car, actually a Radical Sportscars SR8 fitted with two electric motors and a 55kWh battery pack took on this mammoth challenge in order to prove the reliability and ease of operation (charging etc) of EV's in some of the world's most remote and diverse climatic conditions. The team pulled into Ushuaia on November 18th after 70 days of actual driving. In spite of accidents, suspension problems and even a fire, this little EV couldn't be stopped from reaching its goal.

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ALTERNATIVE TECHNOLOGY ASSOCIATION : Promoting energy saving & conservation to households

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Are these be the first EV's People see or Ignore?

EV Trucks

Frito-Lay (the American Snack food giant) has ordered 176 battery-powered delivery trucks from Smith; estimates suggest Frito-Lay will save 500,000 US gallons of gasoline a year by electrifying its massive North American fleet. But like the Oil based commercial vehicle market, there's a backlog for electric trucks too. Smith says its trucks are back-ordered until the second quarter of 2012.

The commercial vehicle market like delivery trucks, buses and vans provide a great demographic for the introduction of electric vehicles, they have set routes of around 75km per day that they complete each and every day. This means their range can be tailored to suit with appropriate battery sizes and recharge stations positioned at lunch stops. The US government aids in the purchase of electric commercial vehicles with a \$12,000 purchase incentive for trucks and busses; (\$7,500 for cars).

Maybe we should start talking to our local federal members for a tax break here!



Currently President Obama has a goal of having 1 million electric vehicles on American roads by 2015. At present, six companies are vying to win a contract that would provide 100 electric vehicles to the government's General Administration services 214,000-strong fleet. A newcomer to the US and market leader is Smith Electric vehicles from Britten.

In an interesting twist, the US government isn't looking for electric sedans to chauffeur VIPs or parade around at White House events — rather, it wants electric versions of the humble, plain old delivery truck. Smith's heritage is based on the electric milk floats of the 50's and 60's, with current production encompassing 2 to 12 ton trucks. So with all the electric cars poised for release in the coming months, it's easy to think of 2011 as the year these cars hit the road en masse. But in fact, there's already electric vehicles trucking about – electric trucks to be exact, and they've been put to heavy use by companies like Coca-Cola and FedEx.

TURANTOR PlanetSolar

I thought it was time we caught up with the progress of the PlanetSolar PV powered electric Trimaran on its round the world trip. On 25th May PlanetSolar docked in Brisbane after traversing the Pacific via Tahiti – Tonga and New Caledonia.



18th of June saw the boat reach Cairns for a brief stopover before continuing north. It is currently doing its sponsors proud in dock at Manilla prior to heading for Hong Kong, Shanghai, Mumbai, Abu Dhabi then returning via the Suez Canal to Monaco.

On route, PlanetSolar has so far broken two records - the fastest crossing of the Atlantic by solar boat and longest distance covered by a solar powered electric vehicle.

The crew's aim is to sail her at an average speed of 7.5 knots - just on 14km/h - which, is roughly what your average oil tanker makes. On less sunny days the battery bank can keep up the 7.5 knot average for 3 days before needing the Sun to shine.

Leaf Power Plant



Now here's another thing to do with your new EV. Nissan has unveiled a new power supply system that allows electricity stored in the LEAF's lithium-ion batteries to be supplied to a house. With up to 24 kWh of electricity stored, Nissan says the system could supply the average Japanese household with electricity for about two days. The idea is to provide a stable electricity supply in the event of power outages or, *(and I like this one)* to allow consumers to store cheaper off-peak power for use in high demand periods. The system connects the car to the house's switchboard using a connector linked to the LEAF's quick charging port and allows the system to not only supply electricity from the vehicle but also to it for charging.

Nissan's idea is that the system will allow households to be supplied with a stable amount of electricity throughout the day and reduce the burden on the power grid by charging and storing electricity in the LEAF with electricity generated at night or through sustainable methods such as solar and wind power, for use in high demand periods. The system uses a 200V single-phase three wire system. *(US and Japan 3 phase supply)*. The power inverters display panel shows battery power, output voltage and output current, as well as allowing for switching the electricity between various available supplies. The system is suitable for all LEAF's and is to become available later this year.

A Different Shape of Things to Come??



Solar Plane

PC-Aero has released the Elektra-One, a single seat Ultralight class all electric aircraft. The Elektra One is sold with its own hanger that has 20 square meters of Solarworld photovoltaic cells incorporated on the roof, providing zero emission power for both the aircraft and the hangar. The complete system (plane plus "SunAirport" hangar) is expected to hit the market for less than EUR100,000 (AU\$134,000) in early 2012 once certification has been completed. The amazing thing about the Elektra One is that it's composite construction gives the plane an extremely light weight of just 100 kg without the batteries, (Battery weight adds another 100kg) leaving 100kg for the pilot. With highly efficient aerodynamics it is able to be powered by a 13.5 kW brushless electric motor. Germany's "Geiger Engineering" developed the electric drive unit which includes the "HPD" 13.5 (16 kW maximum) electric motor, controller, battery management system and propeller.

Cruising at its 160 km/h nominal speed, the propeller is rotating at just 1400 RPM. At this speed, it is alleged to make only one fifth of the noise of a standard light aircraft and half the noise of an ultralight. Once airborne, it is remarkably thrifty with its use of energy. It can remain airborne for three hours and it's claimed to have close a 500 kilometer maximum range. *"(160kmh x 3hours = 480km – If you are high enough you could glide the extra 20km)"*.

Elektra-One made its maiden flight on March 19 this year in Augsburg (Germany) and is set to fly in the US\$1.5 million NASA CAFE Green Flight Challenge in California in September 2011. *(Stay tuned for a report!)*

This Month's Q&A Technology Tip



Q: I've got a new speed controller but I'm not sure how to set up a precharge. What options are there?

A: EVWorks has released an automatic precharger for all main contactors. The unit takes the 12volt coil drive circuit and controls the operation of the main contactor, not allowing activation until the precharge has suitably powered up the capacitors within the controller.

Not a bad price either at \$49.50+

<http://www.evworks.com.au/index.php?product=CTL-ZEVA-AP1.0>