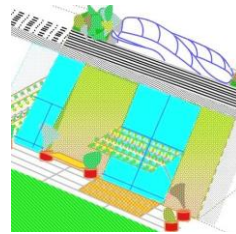
LINKED PISTON GENSET AND SUSTAINABLE EV RECHARGING

COMPANY CLP Technology
TEL +46 31 422107
WEBSITE www.clptech.com, www.mulecell.com

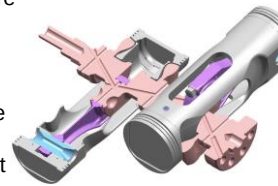
■ **EV Hybrids are not dependent on Hydrogen Fuel Cells.**
Using ICE gensets, EV's with supercar performance yet long range hyper-economy can be built *tomorrow* with current technology & fuels. Home-plug-in recharges for pennies & fuel power means long range. We have developed 3 concepts to help complete this ideal EV jigsaw.

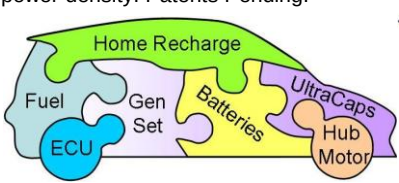
A) The *HART* is a new house roof wind turbine developing substantial annual grid contribution and net carbon cancellation. Selling or leasing HART's allows vehicle makers to leverage money from oil producers, and ensures 100% sustainability.

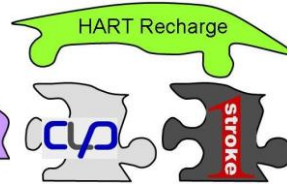


B) The *CLP* engine (Compact Linked Piston) is the lowest friction and simplest mechanism for a conventional piston engine, therefore the most efficient electricity generator.

C) The *ONE STROKE* engine is a combination of *CLP* and 2 stroke *REVIFLOW* combustion – resulting in the ultimate one stroke efficiency for piston based electricity conversion in a compact power density. Patents Pending.







CLP can help develop your production-tomorrow-realistic EV strategy to accelerate your products to meet the impending revolution from piston to motor drive. EV's start now with standard and biofuels!

135 x 89mm

POWER MANAGEMENT

COMPANY Delta-Q Technologies Corp
TEL +1 604 327 8244 ext.108
✔ Online Reader Enquiry Card No. 525

■ **Founded in 1999** and based in one of the leading power technology clusters in the world – Vancouver, BC, – Delta-Q Technologies Corp delivers advanced power conversion and power management products for recreational, industrial, on-road, hybrid and specialty electric drive vehicles. The QuiQ™ battery charger, launched in 2003, has been successfully adopted as the charger of choice by many leading OEMs of golf cars, neighborhood electric vehicles, utility vehicles, floor maintenance machines and material handling equipment.

Compared to traditional battery chargers, the QuiQ charger from Delta-Q can charge batteries up to 25 per cent faster while using up to 15 per cent less input AC grid power. An advanced power conversion topology provides maximum AC to DC power conversion efficiency, allowing the charger to be fully sealed for onboard applications and ensuring maximum reliability in demanding usage environments. Power factor correction not only maximizes the utility of incoming grid power, but also allows the OEM to single-source one charger to meet stringent CE requirements for Europe. In addition, the wide-ranging AC input voltage allows the charger to operate from worldwide grid power, reducing the OEM's inventory count from multiple AC input specified chargers down to a single charger.

Delta-Q takes a systems-level view of the electric drive propulsion system and is now working on innovative new products on the path to becoming a one-stop shop for the OEMs' power system requirements. Active development programs include DC-DC converters, motor controllers and battery monitoring systems.

COMPACT GENERATORS AND SUSTAINABLE RECHARGING FOR EV'S.

COMPANY CLP Technology
TEL +46 31 422107
WEBSITE www.clptech.com

■ **EV Hybrids are not dependent on Hydrogen Fuel Cells.** Using ICE rechargers, EV's with supercar performance yet long range hyper-economy can be built *tomorrow* with current technology & fuels. Home-plug-in recharges for pennies & fuel power means long range. We have developed 3 products to help complete the ideal EV jigsaw.

A) The *HART* is a new house roof wind turbine developing substantial annual grid contribution and carbon cancellation. Selling or leasing HART's allows vehicle makers to leverage money from oil producers, and ensures 100% sustainability.

B) The *CLP* engine (Compact Linked Piston) is the lowest friction and simplest mechanism for a conventional piston engine, therefore the most efficient electricity generator.

C) The *ONE STROKE* engine is a combination of *CLP* and 2 stroke *REVIFLOW* combustion – resulting in the ultimate one stroke efficiency for piston based electricity conversion in a compact power density. Patents Pending.

CLP can also help you map out a production-tomorrow-realistic EV strategy to accelerate your products to meet the impending revolution from piston to motor drive. Don't wait for Fuel Cells, EV's start now!

Y30 x 95mm

SILICONE MATERIAL SOLUTIONS

COMPANY Dow Corning
TEL +32 6488 8812
✔ Online Reader Enquiry Card No. 526

■ **What are consumers most concerned about** when purchasing a hybrid vehicle? Price, of course, but also performance. They certainly want their new vehicle to be as reliable as their previous petrol-fueled one, but far too often automotive problems are the result of faulty electronic and electrical components.

To help ensure true reliability in the functioning of electronic and electrical components, Dow Corning supplies an unsurpassed selection of reliable silicone material solutions to the automotive electronic and electrical industry. Coupled with the company's reputation for superior technical service and total solution focus, these materials demonstrate the intrinsic properties of silicone and rarely can be beaten in performance.

Dow Corning is a strong investor in thermal management solutions, and is the innovative partner of choice that helps keep customers' electronic power components from being too hot to handle; this is especially important with hybrid vehicles, where current and voltage both run high. In addition, Dow Corning supplies silicone gels, encapsulants and coatings used to protect IGBTs, MOSFETs, electronic controllers and inverters.

Contact Dow Corning today to collaborate with the experienced leader in silicone material solutions, providing protection and heat dissipation for electronic and electrical components used in hybrid vehicles.

BATTERY TESTING TECHNOLOGY

COMPANY Digatron
TEL +49 241 16809-56
✔ Online Reader Enquiry Card No. 528

■ **Hybrid electric** vehicles (HEVs) represent the best short-term and medium-term option for improved fuel economy and reduced emissions. Toyota is leading the way in hybrid work for the mass car market, and the company is planning to manufacture 400,000 hybrids in 2006, rising to one million by 2010. Market estimates indicate that the hybrid electric vehicle market could reach three to five per cent of total worldwide automobile production by 2010. This could result in an annual market for up to three million HEVs by 2010.

Digatron's HEV tester is a battery simulator and tester

Depending on the specification and performance requirements of the vehicle electrical system, the battery type could be nickel metal hydride (as used in the Toyota Prius), lithium-ion (under development), or advanced lead acid. The implications for battery testing are that the test equipment should be as flexible as possible, and the minimum and maximum voltages of the battery systems under test need to be considered. These range from 1.2V for NiMH to a maximum of about 4.2V for Li-ion. The power output (W/kg) from the battery is very important for hybrid electric vehicle applications, so tests will need to be carried out at constant power as well as at constant current. The test equipment needs to be capable of short high-current pulses in both charge and discharge.

In same applications, a high dynamic current/voltage source is required, simulating batteries to test the electric drives, which means that tests will need to be carried out at constant voltage. The test equipment needs to regulate the high dynamic load changes during acceleration and recuperation periods.

The Digatron/Firing Circuits HEV tester currently has the highest dynamic on the market and operates as a battery simulator as well as a battery tester. Integration into any supervising control system can easily be made by the CANbus interface.