



AUDI REVEALS THE PURELY ELECTRIC e-TRON QUATTRO

At this year's Frankfurt Motor Show (IAA), Audi presented the e-tron, a high-performance sports car with a purely electric drive system. Four motors—two each at the front and rear axles—drive the wheels, making the concept car a true quattro. Producing 313hp (230 kW) and 3,319.03 lb-ft (4,500 Nm) of torque, the two-seater accelerates from 0 to 62 mph in 4.8 seconds, and from 60 to 75 mph in 4.1 seconds. The lithium-ion battery provides a truly useable energy content of 42.4 kilowatt hours to enable a range of approximately 154 miles.

The performance figures are not the whole story. The design is intended to place the e-tron in the sports car major leagues, while packaged to take into account the specific realities of an electric vehicle. The battery is directly behind the passenger cabin for an optimal center of gravity and axle load distribution. The e-tron is able to freely distribute the powerful torque of its four electric motors to the wheels as required. This torque vectoring allows for dazzling dynamics and exceptional agility and precision when cornering. The drive system, the power electronics and the battery are controlled by an innovative thermal management system that is a crucial component for achieving the car's range without compromising its high level of interior comfort. ■



FISKER KARMA PLUG-IN HYBRID ELECTRIC TO HAVE TOP STATS

The Fisker Karma plug-in hybrid electric vehicle will emit just 83g CO₂/km and have an economy rating of 67.2 mpg, according to Society of Automotive Engineers (SAE) methodology measuring emissions for plug-in hybrids. The four-door Karma aims to be one of the cleanest, most fuel-efficient cars in the world, while still offering world-class style and performance. The SAE estimates carbon dioxide output will be less than that of today's cleanest production cars and 75 percent less than that of competing vehicles, on average. Some 248 million gallons of gasoline could be saved and 2.5 million tons of CO₂ offset by selling 15,000 Karmas per year through 2016. Yet, with 403 hp and more torque than many supercars, 0-62 mph takes about six seconds with maximum speed of 125 mph. Fueling the Karma could cost just 3¢/mile, consuming as little as 21 kWh per 62 miles in electric-only Stealth mode, according to SAE methods. Fisker figures a real-world annual average would be closer 7¢/mile, based on a mix of Stealth and Sport (gasoline) mode use. Individual results may vary. Stealth mode is engaged on demand via steering wheel-mounted paddle switches. The Karma will be the first production Plug-in Hybrid Electric Vehicle (PHEV) when it goes on sale in 2010. ■

ALL-ELECTRIC VOLVO C30 PROJECT PRESENTED

In addition to the market introduction of a plug-in hybrid in 2012, work is under way at Volvo on an entirely electric-powered car known as a BEV (Battery Electric Vehicle).

"The Volvo C30 is the first model we will try out with electric power. This car's excellent properties in city traffic and its relatively low weight make it particularly suitable, since electric cars are primarily expected to be used in and around cities and for daily commuting," says Lennart Stegland, Director of Volvo Cars Special Vehicles.

It looks like a regular Volvo C30. The difference is that it is powered solely by electricity, entirely without tailpipe emissions, and has a range of up to 90 miles.

Prototypes of the C30 BEV have been built and tested this year. Much of the focus is on integration of the electric propulsion system with the rest of the car. The electric motor is housed under the hood, just like the engine in a conventional car. Batteries will most likely be in the prop shaft tunnel and the normal fuel tank location, within the car's optimized crumple zone. Since the car runs solely on electricity, it requires a larger battery with higher capacity (24 kWh) than a plug-in hybrid (12 kWh).

The C30 BEV is limited to a top speed of about 80 mph, more than sufficient for most drivers. Acceleration from 0 to 60 mph will take close to 11 seconds. ■



TESLA ELECTRIC VEHICLE FAST CHARGE CLEAN CITIES' DEMO

A demonstration of a J1772 fast charge of an electric Tesla Roadster was held in late September following a meeting of the Tucson Regional Clean Cities Coalition. The demonstration was sponsored by Pima Association of Governments' Clean Cities Program, the City of Tucson, and Coulomb Technologies. The Tesla Roadster has a charge range of 244 miles and accelerates from 0-60 mph in 3.9 seconds. The PAG Regional Council signed a memorandum of understanding with Nissan North America and Scottsdale-based ECOTality Inc. in March (see our Sept/Oct issue) to help implement electric vehicle infrastructure in the Tucson region in advance of the late 2010 deployment of Nissan's all-electric Leaf. "We have made a commitment to Nissan and ECOTality to join together to end range anxiety and make EV charging available to our community. This technology will play a role in that commitment," said Clean Cities Program Manager Colleen Crowninshield (pictured at right, above). J1772 is a standard that all future electric vehicles, including the Nissan Leaf and GM Volt, will support to ensure a universal connection from the vehicle to the charging station. ■

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