

## ThinGap Announces:

### Exhaust-Based Generator System for Mass-Produced Automobiles Set to Improve Fuel Economy

VENTURA, CA – APRIL 28, 2009 -- ThinGap Automotive, a majority-owned subsidiary of ThinGap LLC, today announced the Turbo Generator, a subsystem for increasing fuel economy of mass-produced vehicles by generating electrical energy from vehicle exhaust gases before being emitted into the atmosphere. The company expects significant fuel savings in the US and European fuel economy test cycles and all other vehicle operating modes as well.

“Up to 40 percent of fuel energy for internal combustion engines is lost through exhaust gas, a large portion of which the Turbo Generator converts to electricity, which can help Original Equipment Manufacturers (OEM’s) meet the new Corporate Average Fuel Economy (CAFE) regulation that requires a 40 percent increase in fuel economy,” said Rean Pretorius, CEO of ThinGap Automotive

“ThinGap Automotive’s innovative technology generates power up to extremely high rotational turbine speeds, making the direct drive Turbo Generator a space-efficient and cost-effective solution” said Gerhard Delf, Chief Technology Officer. Mr. Delf spent 18 years with Volkswagen and concluded his tenure as Chief Engineer, Power Train & Emissions of Volkswagen, USA. “This is the first turbine generator that fits into the engine compartment of passenger cars, SUVs and pick-up trucks and can be installed in these vehicles under assembly line mass production conditions.”

The Turbo Generator directly increases vehicle fuel economy by a variety of methods, including:

- Supplying electric power to the vehicle’s electrical system, allowing for use of smaller alternators or no alternators
- Driving engine accessories electrically that are currently crankshaft driven (e.g. water pump, power steering pump and air conditioning compressor) without increasing the alternator size
- Directly driving the flywheel motor of semi-hybrid vehicles
- Supplementing the energy supply to the battery system of full hybrid vehicles, thereby reducing the required on-time for the internal combustion engine

For more information: Contact Shelly Ward, ThinGap Automotive Director of Application Engineering at (805) 447-9741 extension 233 or visit [www.thingapautomotive.com](http://www.thingapautomotive.com).

#### **About ThinGap**

The parent company of ThinGap Automotive, LLC is ThinGap LLC, which designs and manufactures an innovative line of standard and custom brushless and brush motors. Applications include those that require high power, efficient, low weight and small package size. The technology helps OEM’s innovate more responsive, controllable and precise products not possible with the use of conventional motors.

ThinGap has been granted seven patents and has thirteen patents pending. The technology allows high copper-packing density and higher copper-to-total stator-volume ratio than motors with conventional wire windings. By replacing the iron core/laminations and wire windings used by conventional motors with a precision thin copper sheet, the motors provide higher power-to-

weight ratios, a wider range of speed and torque capabilities, improved heat dissipation and lower electrical resistance. For more information, please visit: [www.thingap.com](http://www.thingap.com)