Introducing heat regeneration in tomorrow's automotive powertrains

heat2power, a company based in Paris, France is convinced to have in hand a technology to reduce the fuel consumption and CO_2 emissions of tomorrow's cars, trucks, and ships.

Frédéric Thévenod, heat2power's technical director says: "We have analysed the power flows in and around the combustion engine. The power lost through the exhaust which is about 90-110% of the power flowing to the gearbox is a major source for improvement."

To regenerate the lost energy into torque on the crankshaft, the work consisted in putting together a novel thermodynamic cycle using the temperatures in the exhaust and obtaining a high power density while restricting the system to existing engine blocks and existing technology for easy industrial adaptation. Recycling about 35% of the waste heat in a piston-cylinder, the system allows for a reduction of an estimated 27% in fuel consumption and CO_2 emissions over the whole range of operation for a moderate price tag. The power density is very high and adds little extra mass to the vehicles.

Randolph Toom, heat2power's commercial director, sees a major interest for hybrid-electric powertrains: "Whereas electric drive excels in stop-&-go and low speed driving, the heat2power concept brings advantages in medium to heavy loads as in extra-urban driving and in battery recharging mode. The technologies are very complementary and offer a major breakthrough for the coming decade".

The company is now starting development programs with OEMs and expects increasing interest from all transportation industries.

More information on www.heat2power.net