



## LiquidPiston Unveils Compact High Efficiency Engine at SAE World Congress

BLOOMFIELD, Conn – April 7, 2010 – LiquidPiston, Inc. – In a paper to be presented at the 2010 SAE World Congress, April 13-15 at the Cobo Center in Detroit Michigan, LiquidPiston, Inc. will publicly reveal for the first time, the architecture of its High Efficiency Hybrid Cycle™ (HEHC) engine. Based on a series of patented technology breakthroughs developed by a serial innovator and his MIT- educated son, Drs. Nikolay and Alec Shkolnik, the thermodynamic efficiency of the HEHC cycle offers a 20% to 50% improvement over the best diesel engines. In addition, the engine is ultra-compact, delivering one horsepower per pound, and operating quietly without a muffler.

The paper describes LiquidPiston's third generation engine prototype, which was first test fired in January 2010. It provides an air-standard analysis of efficiency, including a comparison to conventional engine technologies. The paper, entitled "High Efficiency Hybrid Cycle Engine," (SAE Paper number 2010-01-1110), was independently and anonymously peer-reviewed by three industry experts, and will be presented by LiquidPiston Chief Engineer, Steve Nabours, during the "New Engines and Components, 2010" session of the Congress.

"Combining the high peak pressures produced during constant volume combustion with Atkinson expansion, which continuously extracts energy as exhaust gases expand to atmospheric pressure, delivers unprecedented fuel efficiency. Also, using a ported design rather than conventional poppet valves makes for extraordinarily quiet operation," stated LiquidPiston co-founder and Chief Technology Officer Nikolay Shkolnik.

Although the company is not pursuing the automotive primary propulsion market due to the long design-in times and prohibitive development costs, it believes HEHC engines for conventional passenger cars could deliver 100+ miles per gallon within a decade. In the near term, the company plans to produce and license flex-fuel engines in the 5HP to 100HP range for a variety of commercial, industrial, and military applications.

"Imagine what you could do with a light weight, quiet, 20 HP diesel engine the size of a shoe box," said Edward Richards, CEO of LiquidPiston. "The company is working with industry partners to develop applications ranging from Auxiliary Power Units for long haul trucks, to field generators for the military, lawn and garden equipment, and range extenders for series hybrid electric vehicles. A number of companies are pursuing new engine designs, but unless the underlying thermodynamics are improved, those engines will only offer incremental advantages over existing technology. The High Efficiency Hybrid Cycle sets a new bar for efficiency and puts engine designs on a new efficiency learning curve. Our running prototype indicates it will be feasible to provide the disruptive improvement in fuel efficiency that is so critical to our economy and environment."

Building a company as lean as its engine, the prototype engine was brought from art to part in 8 months by a team of six full time employees. Since its founding in 2004, the company has used only a small amount of venture capital to achieve multiple design iterations and a working prototype.

### About LiquidPiston

LiquidPiston, Inc. develops rotary internal combustion engines based on an innovative thermodynamic cycle, increasing average-load efficiency to above 50%, which reduces fuel consumption by as much as threefold over conventional engines. LiquidPiston engines are quiet, compact and powerful, with a lower total carbon footprint for environmental sustainability. To learn more, visit [www.liquidpiston.com](http://www.liquidpiston.com).

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