

APPLICANT: EcoMotors

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EcoMotors

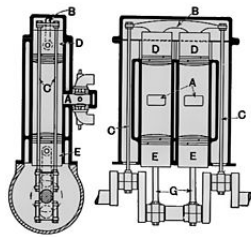
Founded in early 2008 as part of the pre-planned insider program to exploit the DOE ATVM funds, **EcoMotors** is commercializing an [opposed-piston](#) opposed-cylinder (OPOC) engine for use in cars, light trucks, commercial vehicles, aerospace, marine, agriculture, auxiliary power units, generators, etc. This engine was promoted to significantly improve fuel efficiency, and substantially reduce production costs when compared to conventional internal combustion engines.

The principal officers of EcoMotors are: Prof. Peter Hofbauer (chairman, chief technology officer and inventor of the OPOC engine), Donald Runkle (chief executive officer) and Amit Soman (president and chief operating officer).

The two primary investors in EcoMotors are [Khosla Ventures](#) and [Bill Gates](#). [Vinod Khosla](#), who founded Khosla Ventures in 2004, was founder and CEO of [Sun Microsystems](#) and formerly a general partner at [Kleiner Perkins](#).

In April 2013 EcoMotors announced a deal to have Chinese auto parts giant Zhongding Power build a \$200 million factory in the Anhui Province in eastern China. The factory hoped to produce 150,000 OPOC engines per year, with a further site reserved to take production to 400,000.^[1] The engineblocks will be made of CGI (compacted graphite iron) and will be produced at a fully automated Zhongding foundry in Anhui by a licence from Sintercast of Sweden which is the world leader in CGI-technology. The production was first announced to commence in 2014 but is now delayed to the second half of 2015.^[2]

OPOC engine



Gobron-Brillié opposed-piston engine from 1900, which the OPOC engine's basic design emulates.

The OPOC engine is an opposed-piston 2-stroke engine. The OPOC is a [reciprocating internal combustion engine](#) in which each [cylinder](#) has a [piston](#) at both ends, and no [cylinder head](#). There are no valves or a cylinder head.^[3]

Opposed piston engines have been manufactured using one, two and three crankshafts. However, the first opposed piston engine produced was by the French company [Gobron-Brillié](#) in 1900. The engine had one crankshaft and is very similar in concept to the EcoMotors OPOC engine design, except using a camshaft and valves. In 1903 a Gobron-Brillié car powered by the opposed piston engine was the first car ever to reach 100 mph.

The OPOC engine can be moduled with two, or more, engines coupled via an electric clutch between engines. When more power is needed the second engine is clutched in. When clutched out of service there are no friction or pumping losses from the second engine module. This arrangement in city running vehicles could have a small, highly economical engine as the prime engine and when accelerating hard, or pulling heavy loads, the second, or more, engines are clutched into service.^[4]

References

- <http://gigaom.com/2013/04/09/chinese-auto-giant-building-200m-factory-to-make-ecomotors-efficient-engines/>
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 - <http://www.sintercast.com/file/documents/pdf/investor-3/interim-reports-2/2014/en9840986049860984.pdf>
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 - http://www.uniquecarsandparts.com.au/lost_marques_gobron_brillie.htm
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4. <http://www.ecomotors.com/videos/opoc-dual-module>

External links

- [Official EcoMotors website](#)
- ["Opposed Piston Opposed Cylinder Engine"](#) video at [Engineering TV](#)
- [Start-Ups Work to Reinvent the Combustion Engine](#)