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GYATK RVCR Apparatus P Ltd

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Programme Background

The Global Cleantech Innovation Programme (GCIP) for SMEs, funded by the Global Environment Facility (GEF), is implemented by the United Nations Industrial Development Organization (UNIDO) with support from the Cleantech Open, the largest cleantech accelerator in the United States of America. The GCIP for SMEs is currently operating in Armenia, India, Malaysia, Pakistan, South Africa, Thailand and Turkey and takes an innovation ecosystem approach to identify a pool of promising entrepreneurs and start-ups, and supports them through ongoing mentoring, webinars and networking events to grow their innovative concepts into full-fledged business models

Company Information:

'GYATK' was founded by inventor/engineer Mr. Ajeer Kamath to commercialize his globally patented invention of the Disruptive RVCR (Roto-Dynamic Variable Compression Ratio) Technology that leads to Fuel-Hybrid/Multi-fuel Engine Technology. We at GYATK are involved in developing prototypes of RVCR technology based Engines and its know-how. We license RVCR I.P. Rights to engine Industry players and provide them with design consultancy and engineering services in development of Pilot engines for customised requirements.

We are also in process of developing a 450 Bhp Highly Energy efficient, fuel flexible and Emission Smart RVCR pilot Engine for manufacture and direct sale for certain industry segments.

Technology Explanation:

A car with RVCR engines allows multi-fuel usage thus can refuel and run on different fuels, like either diesel or Petrol or green fuel. The fuel can be switched over from one to other during operation.

RVCR is a seed-technology in machine kinematics that enables a feature called 'VCR' (Variable compression Ratio) which specially revolutionises engines and has various downstream applications in renewable energy power generators and utility machines. *The VCR feature has been long pursued by almost all major Engine Industry Players and various 'VCR' Engine test models have been tested, which has established the fact empirically that VCR leads to "Multiple fuel operations capability" and 30% increase in fuel Efficiency, however these models have never been commercially viable.*

RVCR is the cutting edge technological solution that makes VCR Engines commercial viable. Unlike conventional engines which use piston-crank mechanism where VCR feature is nonviable, RVCR engines uses a novel kinematic mechanism where pistons revolve within a doughnut shaped chamber. The power transfer from burning fuel is direct and comparatively simple, light, eliminates reciprocating pistons, flyweight and crank, making engines up to 54% smaller. RVCR technology combines performance gains of rotary mechanism and high efficiency of VCR using a simplified Rotary Vane mechanism.

Unique features of RVCR engines are, wide VCR range, Real-time and setting of optimum power-to economy ratio under varying loads, improving fuel efficiency and power allocation.

Environmental Benefits:

GYATK's RVCR technology is truly in line with the "big ideas that address today's most urgent energy, environmental and economic challenges". RVCR engines uses fuel much more efficiently and have a lower carbon foot print and further more allows use of either any fossil or Green fuels in the same engine, hence enabling a level playing field for green fuels (Biofuel, Hydrogen, Algae based fuels) to compete with fossil fuels without conflict with existing oil based economic structures

RVCR technology leads to Unhooking the economy from "Fossil fuel dependency" and freedom from demand of segregated Logistics for different type of fossil fuels. RVCR covers across industry applications from transportation (automotive, marine, aviation etc.), Energy (Power-generation), Agro sector (Tractor, standalone application) and utilities, and provides for 21st century demands of a green Industry ecosystem.

Company: GYATK RVCR Apparatus P Ltd
Location: Cochin, Kerala, India
Tech-Category: Energy Efficiency; Transportation
Current Stage: Early Alpha Prototype (TR -6)
Next Steps: Achieving Pilot Product
Investment Leveraged to Date: \$ 5 million
Email : info@gyatk.com , ajeer@gyatk.com
Web site: www.gyatk.com