

Enogia can convert even low-temperature heat into clean electricity

Enogia and Carnot IFPEN TE are using enhanced Organic Rankine Cycle (ORC) modules to move beyond industrial uses and target the mobility sector.

Supporting Innovation

Enogia is a Marseille-based SME that harnesses ORC (Organic Rankine Cycle) technology to convert heat into electricity. This technology uses a Rankine thermodynamic cycle – most famously illustrated by the steam generator – together with an organic component. ORC has huge potential in the current energy policy environment but it needs to be green, affordable and as widely available as possible to have a real impact. With a helping hand from Carnot IFPEN Transports Energie, Enogia has already made its device technically and financially accessible for numerous SMEs. It is now possible to convert even low-temperature heat into electricity. The organic heat transfer fluid does not negatively impact the environment and the ORC micro-turbine is a big step towards making boat, truck and car engines cleaner and more energy efficient.



The client needs

Enogia has been designing and manufacturing stationary ORC applications since 2012. It quickly realised that it wanted to make these systems accessible to companies of all sizes.

An initial partnership with the Carnot institute enabled Enogia to develop a range of devices capable of producing between 5 and 200 kW of electric power. The heat transfer fluid – crucial for the project – was selected using simulators and test stands designed specifically by Enogia and IFPEN Transports Energie.

This joint initiative pinpointed a specific market need and culminated in an increase in Enogia's workforce from 10 to over 35 people.

The Company is absolutely convinced of this technology's potential for harnessing low-temperature heat and is now looking to incorporate it into boat, train and car engines. It is continuing to work with Carnot institute IFPEN Transports Energie towards a first industrial demo.

Partnership

Carnot IFPEN Transports Energie has been partnering the sustainable mobility challenges of big and small operators since 2006. Thanks to positive results in terms of innovation, tech transfer and industry partnerships it has become an internationally recognised expert. Carnot initially provided Enogia with computational and experimental resources. The two structures worked hand-in-hand to design a micro-turbo pump adapted to motor vehicle engine power that would be compact, eco-friendly and relatively cheap to produce.

A number of patents already filed – jointly owned by Enogia and IFPEN – are a testimony to a fruitful partnership between teams with common interests. Carnot's commitment to this project is helping to grow an SME that is itself driving innovation in a market with high potential.