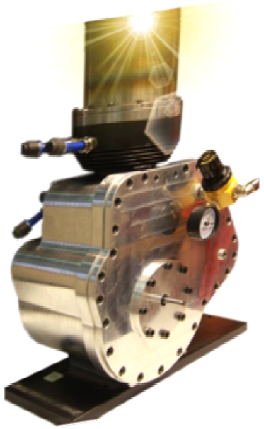
ITS energy

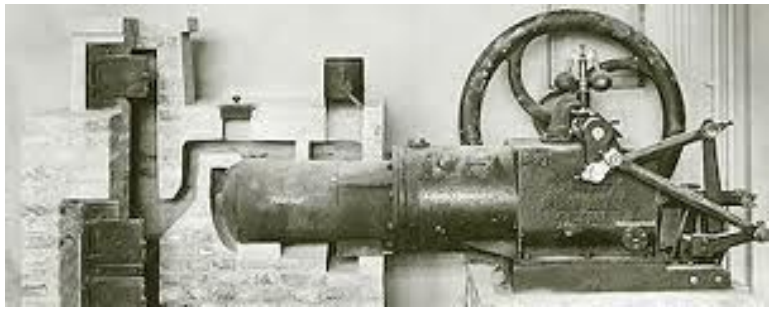
INNOVATIVE TECHNOLOGICAL SYSTEMS



OUR COMPANY

ITSenergy, was founded in 2006 as a individual company and was transformed in 2012 into S.r.l. settling in the new Technological Pole of AREA Science Park in Trieste, TechnoAREA of Gorizia. Recently moved to the industrial area of Fogliano Redipuglia (GO) has always specialized in the research and development of Stirling engines used for the production of electricity and thermal energy from biomass. ITSenergy is also specialized in the design and installation of photovoltaic systems.

OLD TECHNOLOGY
HIGH INNOVATIONS



Stirling Engine is a reversible machine invented in 1816 by Robert Stirling. It is a closed cycle operating machine, i.e. it doesn't have any exchange with the outside, and being an external combustion engine, is adaptable to any fuel. The operational foresee the cyclic heat's exchange between a hot and a cold source by means of a gas contained in the engine.

Our motors, patented worldwide, are distinguished from competitors by:

- Configuring unpublished
- Modularity
- Leightweight and compact
- Lower working temperature
- Low working pressure
- Superior performance
- Possibility of variation of the power

ITS STIRLING'S ANALYSIS

CIVIL APPLICATION

HEAT RECOVERY

LOW WORKING PRESSURE

LOW WORKING TEMPERATURE

AUTOMOTIVE-MARINE APPLICATIONS (PATENDED)

- **POWER OUTPUT** – 1 to 20 kW
- **FUEL** – Biomass, biogas, syngas, exhaust gas, industrial waste heat recovery, solar and fossil fuels
- **WORKING TEMPERATURE** - > 300° C
- **PRESSURE** – < 8 bar
- **MODULATING POWER ON THE SHAFT**

ITS STIRLING'S ANALYSIS

- **MAX POWER** – 1 kW
- **FUEL** – Biomass, biogas, syngas, exhaust gas, industrial waste heat recovery, solar and fossil fuels
- **WORKING TEMPERATURE** - > 300° C
- **PRESSURE** – < 8 bar
- **EFFICIENCY UP TO 30%**
- **ENGINE WEIGHT –** 18 KG

- **MAX POWER** – 2 kW
- **FUEL** – Biomass, biogas, syngas, exhaust gas, industrial waste heat recovery, solar and fossil fuels
- **WORKING TEMPERATURE** - > 300° C
- **PRESSURE** – < 8 bar
- **EFFICIENCY UP TO 30%**
- **ENGINE WEIGHT –** 40 KG

ITS STIRLING'S ANALYSIS

- **MAX POWER** – 10 kW
- **FUEL** – Biomass, biogas, syngas, exhaust gas, industrial waste heat recovery, solar and fossil fuels
- **WORKING TEMPERATURE** - > 250° C
- **PRESSURE** – < 6 bar
- **EFFICIENCY UP TO 35%**
- **ENGINE WEIGHT –** 200 KG

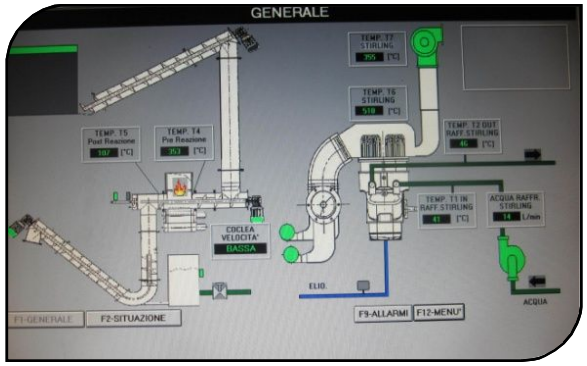
ITS STIRLING'S ANALYSIS

From the drawing.....

- **MAX POWER** – 20 kW
- **FUEL** – Biomass, biogas, syngas, exhaust gas, industrial waste heat recovery, solar and fossil fuels
- **WORKING TEMPERATURE** - > 250° C
- **PRESSURE** – < 6 bar
- **EFFICIENCY UP TO 35%**
- **ENGINE WEIGHT** – 380 KG

.....to reality

ANALIYSIS OF THE POTENTIAL APPLICATION



The ITS Energy engine can be easily used for civil and industrial applications for the production of electricity and cogeneration in general:

- Micro CHP for domestic production of electricity and hot water
- Recovering heat exhaust gas of internal combustion engines
- Industrial waste heat recovery
- Production of electricity in remote rural areas in conjunction with solar concentrators

PROJECTS

CONCLUDED

Micro-cogeneration with 14 kW pellet boiler and integrated Stirling engine. Electricity + Hot water production

Pyrolysis gasifier with a Stirling engine Electricity + Hot water + biochar as sub product

European project FP7 RECOICE Recovery of exhaust gas of diesel engines with Stirling engine for production of ice on vessels board

ONGOING

The **DECISIVE** project brings together a multi-disciplinary consortium willing to design and implement innovative bio-waste management schemes, targeting urban bio-waste. By developing decentralised bio-waste management schemes to be implemented in urban and peri-urban area, DECISIVE aims to promote a local waste management system producing valuable products for urban farming, thus closing the organic loop.

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