AnsaldoTurbec

Micro Turbines

ANSALDO ENERGIA

Ansaldo*Turbec*
Micro Turbines

A LONG HISTORY PRODUCT AND AN HYSTORICAL BRAND MELT UP TO MEET CUSTOMERS' REQUIREMENTS

Turbec AB was founded in 1998 and, in 1999-2000, designed its Micro turbine into a robust industrial product suited for stationary applications and series production.
At the same time the system was also integrated into a complete CHP package.
The first commercial T100 unit was delivered in September 2000 and commissioned in December of the same year.
Different series of this micro turbine where designed and produced in the following years and Turbec AB became an Italian company, Turbec S.p.A., in 2004.
With over 20 years' experience and installations in 5 continents, from China and Australia to Finland, from South Africa to Brasil, and two turbine classes, 100 and 600kW, Turbec micro turbines represents one of the best solutions for micro cogeneration. In late 2012 Ansaldo Energia, leader since 160 years in the supply of components and services for the power generation industry with an installed capacity of over 180.000 MW, has acquired the business unit "Turbec" and the relevant IP rights. The acquisition will give to Turbec products new strength and higher potential, within the "Renewables and Distributed Energy" division of Ansaldo Energia and under a Quality System at highest levels.
The new production plant is at Ansaldo Energia campus in Genova, as well as all engineering, service, development and commercial activities.

COGENERATION (CHP) AND "TRIGENERATION" (CCHP) WITH UNIQUE ADVANTAGES

In cogeneration systems both heat and electricity produced by a power generator are used by the same customer, usually located very close to the generator itself.
The use of both forms of energy coming from the generator, combined with the low or null grid losses, due to proximity of user and generator, make cogeneration systems one of the most efficient ways for a rational use of energy and allow such systems to reach very high overall efficiencies.
Although cogeneration can be based on any kind of power generator (e.g. Internal Combustion Engines) Ansaldo Turbec micro turbines add to the cogeneration advantages:

- Very low maintenance requirements
- Flexible heat use
- Operation with a variety of fuels (natural gas,biogas) and with hot air from potentially any heat source such as, for instance, biomass combustion, solar concentrators etc.
- Compactness
- Very low emissions
- No vibrations
- Very low noise

When part of the available heat is used into an "adsorption chiller" to produce cold we talk of "Tri-generation", simultaneous generation and use of heat, cold and electricity, which is even more efficient overall and is very well suited for those application requiring all three form of energy, like hospitals, data centers, hotels, commercial centers etc.

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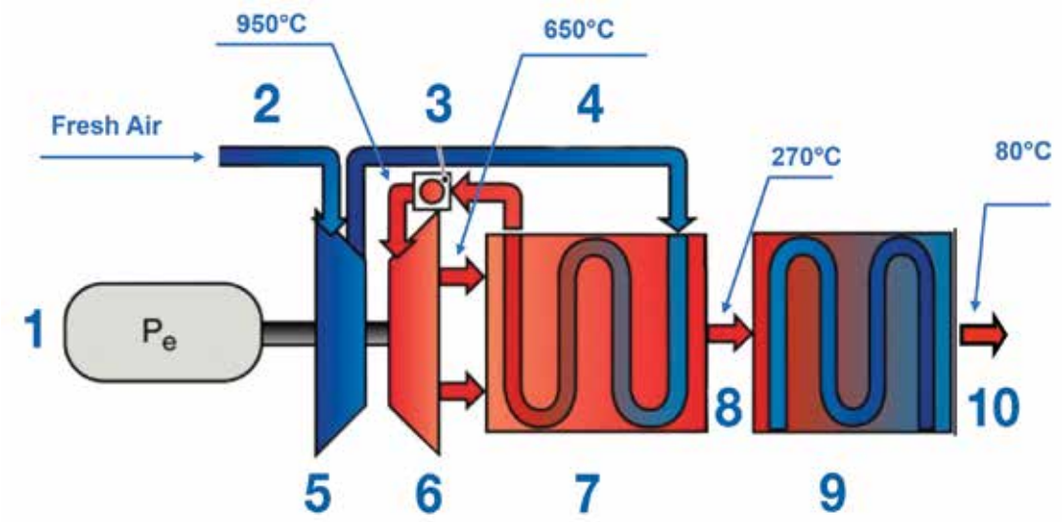
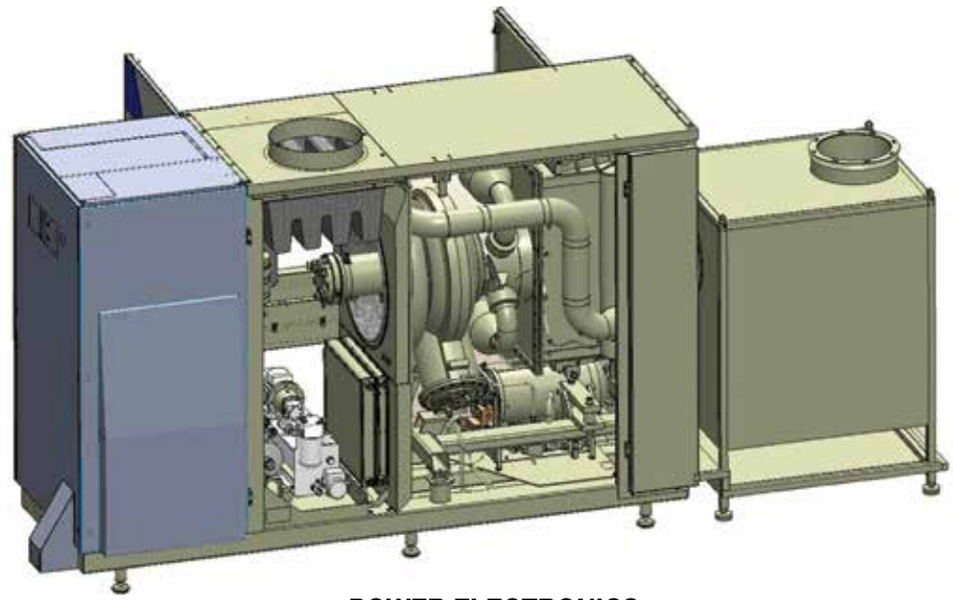
AE-T100: how it works



1. Generator
2. Inlet air
3. Combustion chamber
4. Air to Recuperator
5. Compressor
6. Turbine
7. Internal recuperator
8. Exhaust gases
9. Exhaust gases heat exchanger (option)
10. Exhaust gases outlet

Major Components



ROTOR

The AE-T100 rotor system is composed by a high-speed Generator and by Compressor and Turbine wheels, all on the same shaft, which is the only rotating part in the engine. The system low complexity, together with well proven oil lubricated bearings, contributes to high reliability and low maintenance.

RECUPERATOR

It allows the system to achieve high efficiency with simple components and relatively low operating temperatures.

POWER ELECTRONICS

The advanced power electronics system converts the high-frequency electricity, produced by the Generator, to either AC power or DC power with the specified frequency.

COMBUSTION CHAMBER

The continuous fuel combustion of the micro turbine AE-T100 as opposite to intermittent combustion of a piston engine reduces pollutants emission eliminating the need for expensive and complex post combustion treatment.

EXHAUST GAS HEAT EXCHANGER

The heat exchanger, a gas-water counter-current flow type, transfers the thermal energy from the turbine exhaust to the end user hot-water system.

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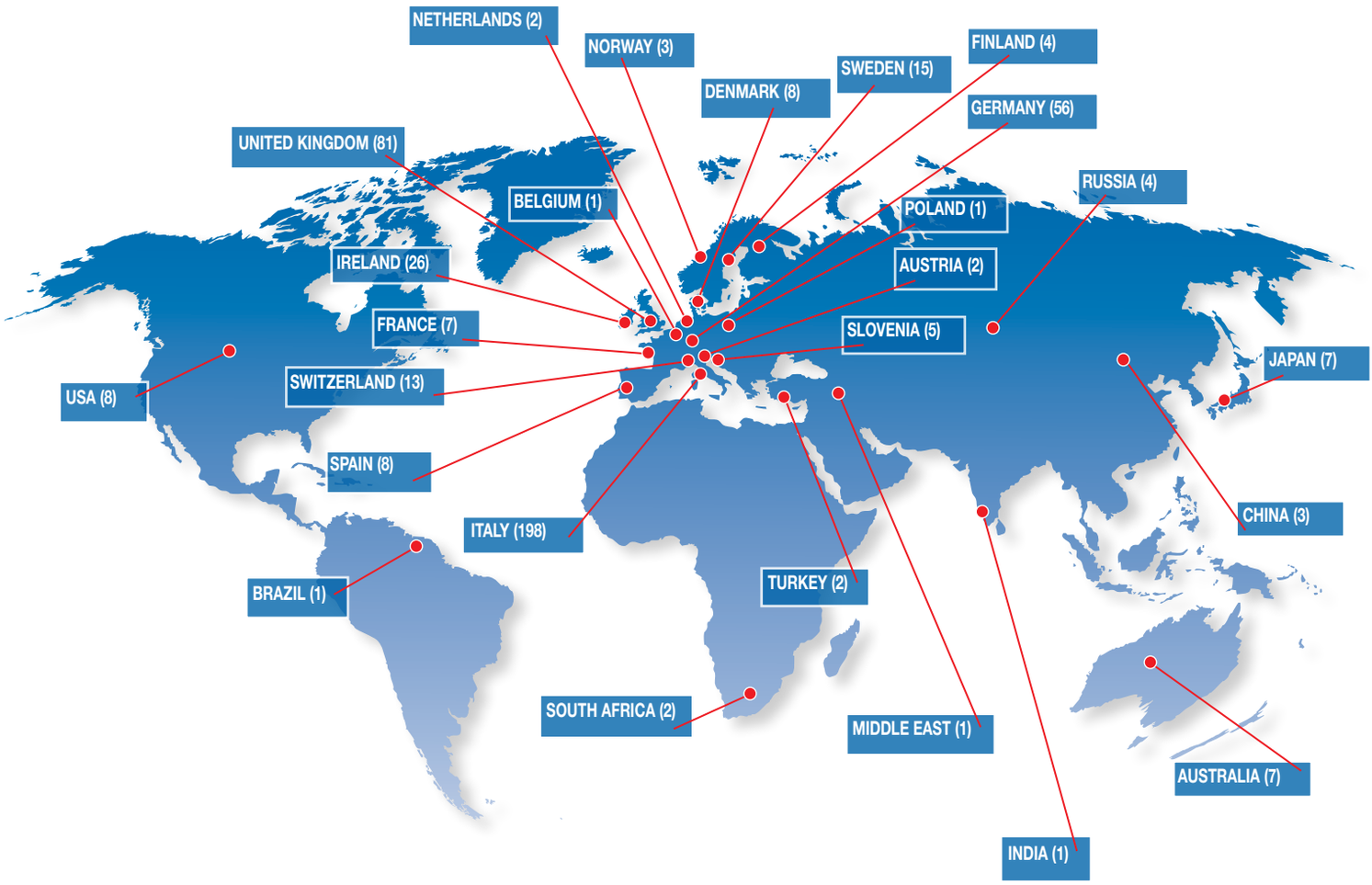
Reference in the World



Last reference in the world (starting from 2007)

Petergraf

Stampa: Microart Recco - Genova 04/2014

2014 1Q Summary

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