



# ENERGY EFFICIENCY FOR INDUSTRIAL PROCESSES

# POWER FROM WASTE HEAT

*Organic Rankine Cycle (ORC) modules designed by Enertime improve and enhance the energy efficiency of industrial processes. Waste heat of medium temperatures (above 130 °C) can be recovered to generate electricity.*

*A plant or a factory can improve its energy efficiency and economic balance by consuming self-generated electricity or through export of the electricity to the grid without extra emission of greenhouse gases.*



## APPLICATIONS

*Enertime solutions are specifically designed for industries processing raw materials and generating large amounts of waste heat (several MW), such as:*

- *FOUNDRY,*
- *GLASS FACTORY,*
- *CEMENT INDUSTRY,*
- *STEEL FACTORY...*

# TAILOR-MADE SOLUTIONS FOR THE INDUSTRY

## The right technology

The ORC technology requires very little maintenance and is particularly relevant for the recovery of heat of low and medium temperatures (from 130° C upwards for liquids and up to 230° C for gases) in small and medium-sized modular units. The use of organic fluids with a high density allows for partial load efficiencies much higher than those of steam cycles for a minimum load of 10% of the nominal.

This simple and robust technology enables fully automated solutions without requiring human presence on site or any specific skill for maintenance. Enertime also offers a full range of services for the maintenance and monitoring of operations. To learn more about the ORC technology, visit:

[www.cycle-organique-rankine.com](http://www.cycle-organique-rankine.com).

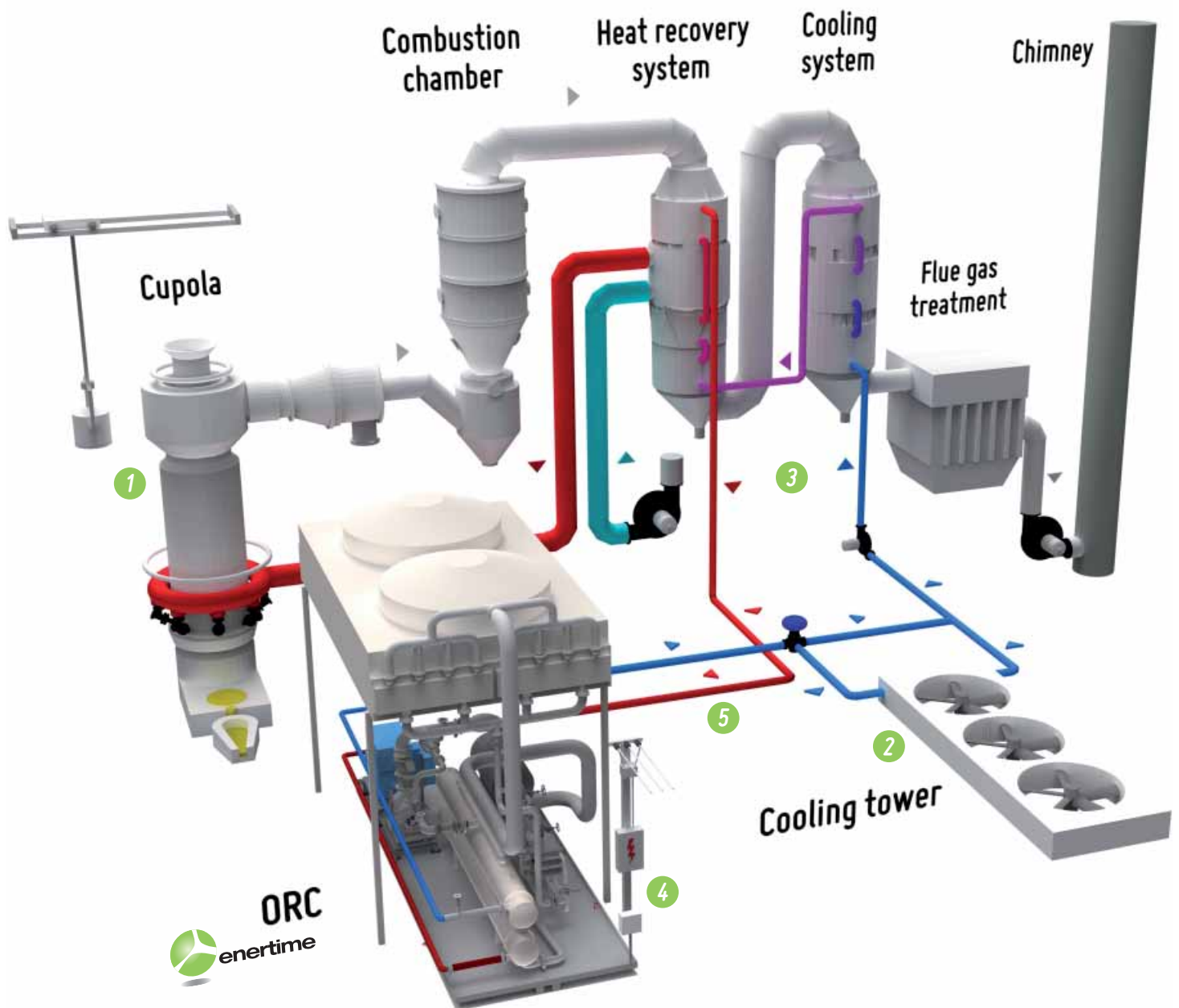
## Tailor-made Solutions

Enertime has upgraded the ORC technology by offering a range of solutions specifically dedicated to industrial applications and which can be adapted to particular cases. To enable this, Enertime designs and manufactures its own ORC turbines and creates custom units.

Enertime has developed the ORC technology by its use of non-toxic and non-flammable working fluids, safe for both the industry and the environment. Enertime offers complete solutions which are easy-to-implement with minimum civil works and connections and no impact on production processes.

These modular solutions are adjustable to the thermal power available on site in order to maximize performance and control investment costs.

# AN EXEMPLE : THE FMGC FOUNDRY IN WESTERN FRANCE



By recycling the heat of smokes of its high stoves, the FMGC foundry reduces its electricity bill by a third.

The FMGC uses a hot blast cupola furnace **1** rising at a very high temperature to produce cast iron. This heat is partly recovered to preheat the furnace. The residual heat is cooled down **2** before evacuation. Enertime has installed an ORC module on the existing exchanger **3** to convert this waste heat into electricity **4**.

With a thermal power of 5.7 MWth available at 200 ° C **5**, the 1 MWe ORC generates 30% of the foundry's power consumption.

# THE ORCHID© RANGE

	ORCHID© 1000	ORCHID© v160°C	ORCHID© cogen
Temperature Inlet	200°C	160°C	220°C
Thermal Power Input	5600 kWth	5400 kWth	5500 kWth
Model	Electrogenic	Electrogenic	Cogeneration
Cold Source	Ambiant Air 15°C	Ambiant Air 10°C	Heat Network
Gross Electric Power	960 kWe	776 kWe	560 kWe
Auxiliaries (including air condensator)	90 kWe	76 kWe	75 kWe
Net Electric Power	870 kWe	700 kWe	485 kWe
Thermal Power (cogeneration)	N/A	N/A	4950 kWth
Temperature (cogeneration)	N/A	N/A	90°C / 60°C

Please consult us for tailor-made systems.

## ABOUT ENERTIME

An innovative start-up company in energy efficiency technologies and renewable energy production based on thermodynamics, Enertime designs and manufactures its own ORC machines in France for the world market. We offer a range of solutions to improve energy efficiency in industry and also:

- improve the energy efficiency of waste treatment units (incineration).
- produce electricity through geothermal low and medium enthalpy wells.
- produce decentralized energy from biomass or solar energy.

Enertime offers ORC modules or turnkey systems, alone or in consortium with manufacturers of industrial heat exchangers, biomass boilers or solar collectors.


Enertime has been awarded during the sixth AMI ADEME Total industry award on energy efficiency with its module ORCHID© 1 MW installed in a foundry in the Loire Valley.



ORCHID©  
module turbine

## CONTACT

Enertime  
62-64 rue Jean-Jaurès  
92800 Puteaux France  
Tel: +33 1 75 43 15 40  
Email: [contact@enertime.com](mailto:contact@enertime.com)

1st page pictures:  
Enertime's ORC module  cement works  
FMGC foundry 