



# ORGANIC RANKINE CYCLE TECHNOLOGY FOR ENERGY EFFICIENCY AND GREEN POWER

**Enertime** offers solutions for power production using heat sources at low or medium temperature.

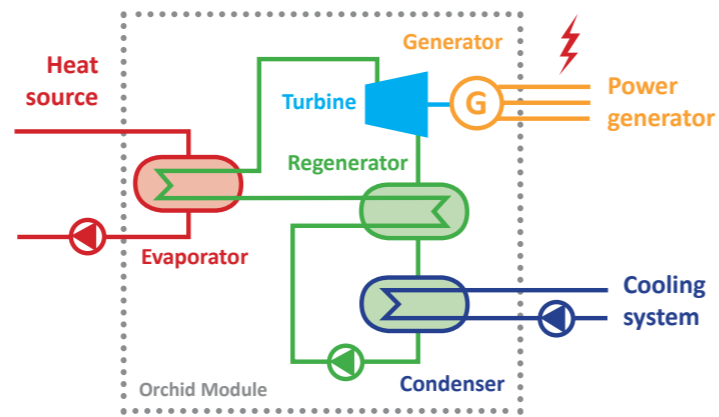
Enertime offers MW-size turn-key solutions in various applications including :

- Energy efficiency with waste heat recovery on industrial processes.
- Geothermal energy.
- Renewable and distributed energy.

The ORCHID© range brings innovative Organic Rankine Cycle (ORC) technology to industrial customers and utilities. ORCHID© is entirely designed by Enertime teams. We customize our solutions according to each client's needs.

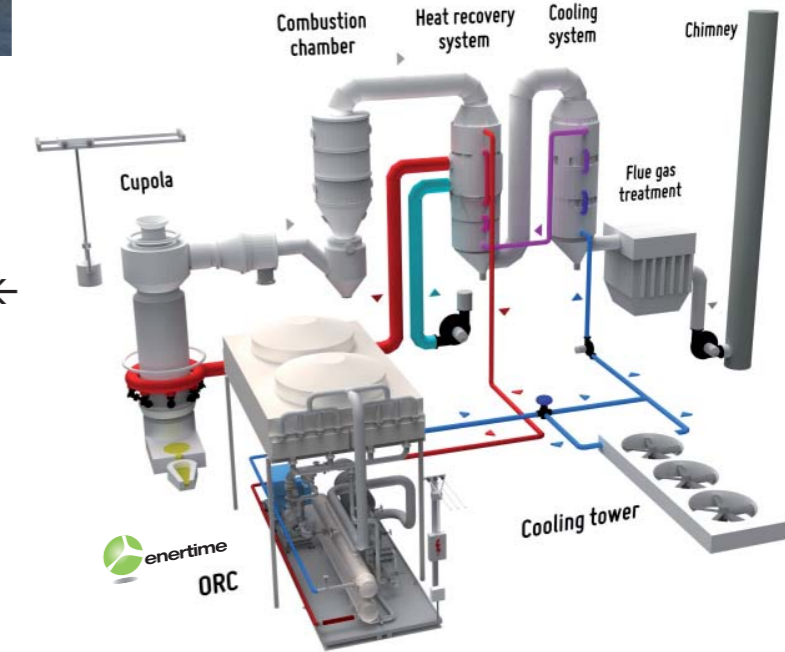
## HOW IT WORKS

Organic Rankine Cycle (ORC) power plants work on the same principle as steam turbines but use an organic fluid instead of water. Thanks to different physical properties, the use of an organic fluid leads to more reliable and higher efficiency plants for low to medium temperature heat sources and small-to-medium-size plants.



## BIOMASS FOR ECO-CITIES

ORCHID© Cogen is used in CHP applications and delivers 550 kW of electricity together with up to 5 MW of heat at 90°C for district heating. The module is fueled by a biomass boiler using saturated steam or superheated water. The complete plant will easily fit in an urban environment and has limited constraints in terms of environmental impact.



## FREE ENERGY FROM WASTE HEAT

ORCHID© is installed in a foundry in Western France and recovers heat from a cupola blast furnace. The electricity produced by the module will cover 30% of the electricity consumption of the foundry and can also be exported to the grid. For Waste Heat Recovery application, the payback of ORCHID© varies from 3 to 8 years, depending on the cost of electricity paid by the customer. ORCHID© 200°C is designed to generate power during 20 years.

## CONCENTRATED SOLAR POWER PLANT

ORC technology associated with parabolic trough or linear Fresnel concentrator allows the deployment of distributed thermodynamic solar power plants, for isolated or island grids alone, or in combination with a biomass boiler. Enertime together with manufacturers of solar concentrators develops an offer for turn-key CSP plants able to operate in isolated grid.



## GEO THERMAL ENERGY

ORC modules are mostly used for geothermal application whenever temperature or financial cost of development prohibit the deployment of large Rankine steam cycles. Other applications include producing electricity with brines in steam geothermal power plants where geothermal steam needs to be flashed and separated from brines.



## ORCHID©

ORCHID© is a 500 kW to 5 MW air-cooled or water-cooled ORC working with a heat source of 90°C to 200°C, using a non-toxic and non-flammable fluid in a close loop. The 1 MW module is built on a 40 feet container size skid, modular and easy to transport and install on site. Enertime offers turn-key installation of the module in all applications including waste heat recovery, geothermal, biomass and Concentrated Solar Power.



# MAIN TECHNICAL SPECIFICATIONS

## RANGE

Electric power  
ORC inlet temperature  
Turbine

## ORCHID©

5 MWe to 500 kWe  
90°C to 200°C  
subsonic multistage  
2 bearings

## RAINBOW©

300 to 100 kWe  
200°C  
supersonic single stage  
with over hang

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 geothermal, waste treatment, biomass or solar units.

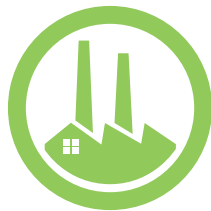
Enertime offers ORC modules or turnkey systems, alone or in consortium with manufacturers of industrial heat exchangers, biomass boilers or solar collectors.

Enertime has ORC references in various fields:

Industrial heat recovery, biomass, geothermal and solar thermal.



ORC turbine



## CONTACT

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Enertime's ORC module	<input type="checkbox"/>	<input type="checkbox"/>	diesel power plant in Mayotte
geothermal power plant	<input type="checkbox"/>	<input type="checkbox"/>	solar power plant
	<input type="checkbox"/>	<input type="checkbox"/>	FMGC foundry
		<input type="checkbox"/>	SERM biomass boiler