



# Gain power

*with the Againity ORC System*

We convert your waste heat  
into electric power

# Converting waste heat into electric power

The Againity ORC System extracts energy from your waste heat and converts it to electricity. With our solution you can save fuel or gain more power from your system.

## The ORC technology

Againity's turbine system is based on the long-known ORC technology (Organic Rankine Cycle), which is illustrated in the image below. The technology includes a steam turbine set in motion by the pressure from hot steam. The rotating turbine then drives a generator that produces electricity. In good conditions the electrical efficiency is 20%.

## Heating and cooling source

To heat up the steam some kind of heat source is needed. Any heat with a temperature from 90°C can be utilized in the system. After the turbine, the steam is

cooled down by a cooling system connected to either the outdoor air, a river nearby, or hot tap water for residential buildings, hotels, hospitals or industries.

## Quality first

Thanks to the unique design of our patent-pending turbine and the low number of moving parts in the system, a high-quality product can be offered. This minimizes the need for service and maintenance and significantly shortens the payback time.

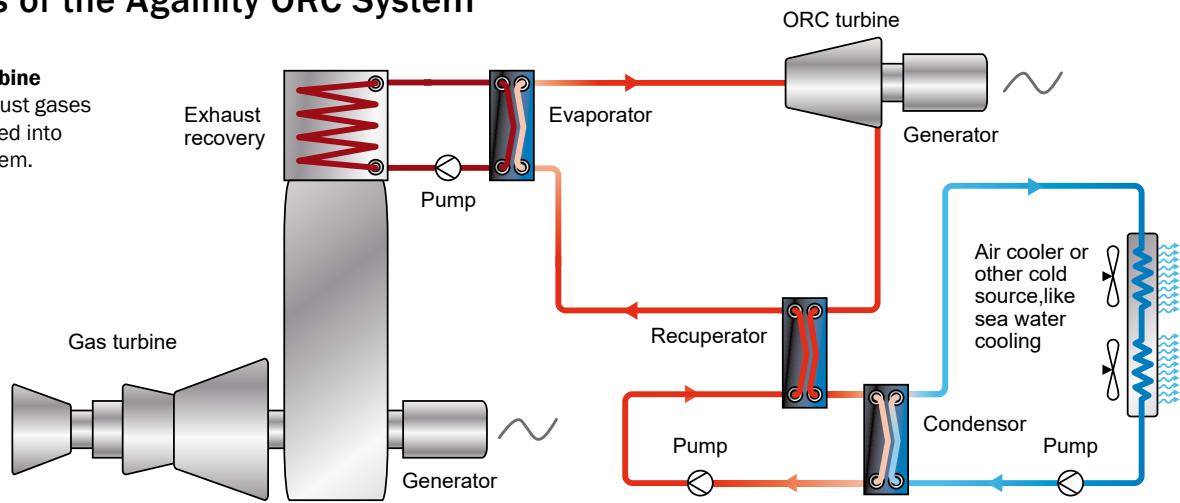
Adding the Againity ORC System to your existing system increases the effectiveness of your plant – at a low investment cost.



## Flow charts of the Againity ORC System

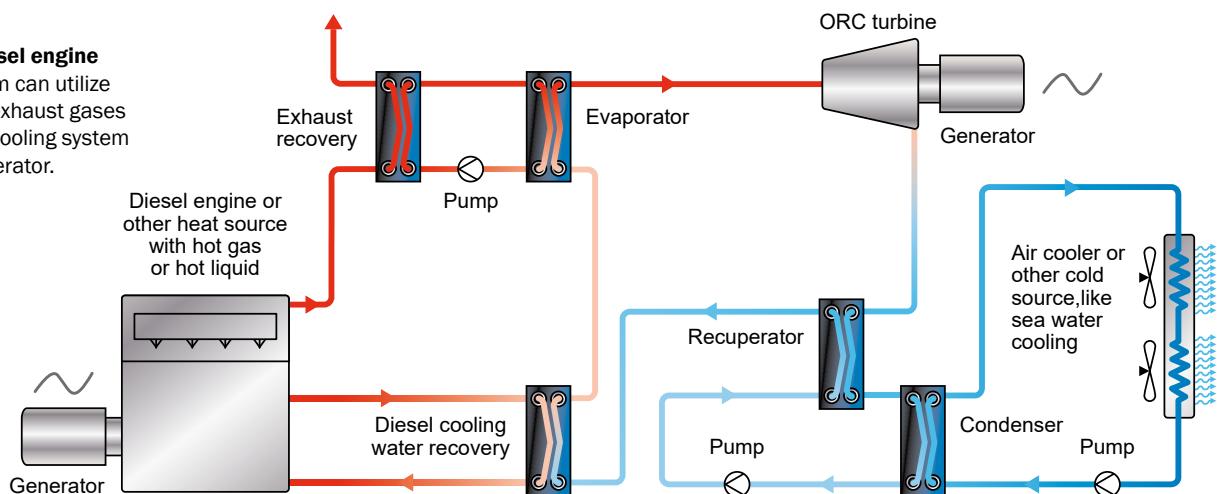
### Flow chart gas turbine

Heat from the exhaust gases of a gas turbine is led into Againity's ORC system.



### Flow chart diesel engine

The ORC system can utilize heat from the exhaust gases as well as the cooling system of a diesel generator.



# Versatile application possibilities

The Againity ORC System can be installed in numerous applications, enabling you to gain more power from your existing system while saving energy and the environment.

## Manufacturing

 In manufacturing industries using diesel generators, gas turbines or heating processes there is heat generated in the exhaust gases as well as in cooling systems. These heat sources can easily be connected to Againity's system transforming the heat into electric power.

## Boilers and heating plants

 A steam or hot water boiler or an rice/coffee/sunflower husk incinerator can easily be combined with the ORC system by connecting part of the heat from the boiler circuit to the ORC system's evaporator. The excess heat from the ORC system can be utilized for local heat demands or exported to a district heating system.

## Infrastructure

 A diesel generator by a telecom tower produces up to 80% waste heat. With the Againity ORC System you can easily turn this waste heat into electric power.



Model AT100

## Mining

 The mining industry often needs reliable sources of electricity for a safe and efficient production. By adding the Againity ORC System, energy cost savings without decreased reliability can be realized.

## Real estate & hotels

 Do you have, or plan to install, sun panels on your roof? With the Againity ORC System you can use your sun panels not only for hot water generation but also to produce electricity. By storing the hot water in isolated water tanks you can store the energy until you need it – without expensive batteries.

## Power production plants

 Gas turbines, gas engines and diesel generators all generate large amounts of waste heat. Why not turn this energy into electric power?

Also solar and geothermal energy can easily be turned into electric power with the Againity ORC System. By storing the hot water in well insulated water tanks the electricity production can continue day and night.

## Benefits

### A versatile system

The Againity ORC System consists of a stand-alone modular system specifically designed for easy installation at a wide range of industrial facilities.

### Cost effective design

The innovative high efficiency turbine is designed for long service intervals reducing maintenance costs.

### Simple commissioning

All our systems are factory built and tested, enabling a quick and easy installation on-site – almost like plug'n play! On-site installation requires simply connecting the Againity system to the heat source and then plugging in to the electricity network.

### Fully automated

The Againity ORC System is fully automated and designed for versatile use under a wide range of operating conditions. The system is equipped with a TCP/IP connection for remote monitoring and control – thus no personnel are required on site!

### The range

Againity ORC modules starts at 20 kW and are available up to 2 000 kW. The modules are easily combined and the maximal power output of a plant hence unlimited. The systems are fabricated and delivered at a high grade of pre-assembly units for short installation and commissioning time at site.



Model AT2000





Againity is all about turning waste heat into something useful – electric power! This gives you a more energy efficient production, more performance and less cost – while saving the environment.

### The Againity ORC Systems

The ORC systems are offered from 20 kW electricity and can be combined, hence unlimiting the maximum output. The ORC system is delivered separately or together with a boiler/incinerator/waste heat recovery unit, or other equipment upon request.

	<b>AT20</b>	<b>AT50</b>	<b>AT100</b>	<b>AT200</b>	<b>AT400</b>	<b>AT1000</b>	<b>AT2500</b>
<b>Installed capacity</b>	20 kW	50 kW	100 kW	200 kW	400 kW	1000 kW	2500 kW
<b>Size (L*W*H)</b>	2500*1140*2000 mm	2500*1140*2000 mm	3250*2000*2150 mm	6058*2438*2896 mm 20 ft standard high cube container	6058*2438*2896 mm 20 ft standard high cube container	12116*2438*2896 mm 40 ft standard high cube container	18174*2438*2896 mm 40 ft + 20 ft standard high cube container
<b>Freq.</b>	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz
<b>Voltage<sup>2)</sup></b>	380-415V	380-415V	380-415V	380-415V	380-415V	3000-6000V	3000-6000V

<sup>2)</sup> Other voltages on request

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### A gainity AB

Visit and post address: Laxholmstorget 3 (3rd fl), SE-602 21 Norrköping, Sweden  
 Phone: +46 (0)70 529 32 23, e-mail: info@againity.com  
[www.againity.com](http://www.againity.com)