

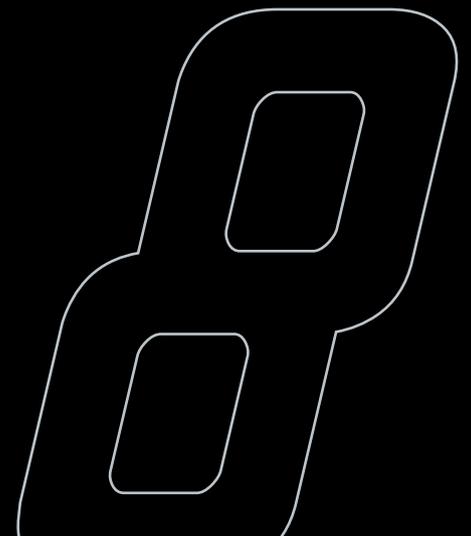


From waste to electricity

with Againty's modular waste-to-energy plant



We convert your waste
into electric power



Converting waste into electric power

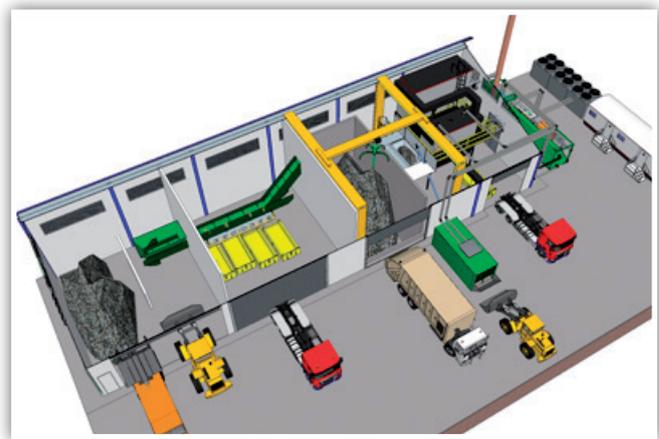
The Againty waste-to-energy plant is a modern and environmentally sustainable solution that converts waste into power.

The technology is based on the latest developments in industrial standards. The waste is incinerated in a boiler that generates hot water. The hot water is connected to an ORC turbine system which produces electricity. State-of-the-art emission control meets the regulations and requirements set by the European Union. The system is built to handle a wide range of sorted industrial, municipal and general waste.

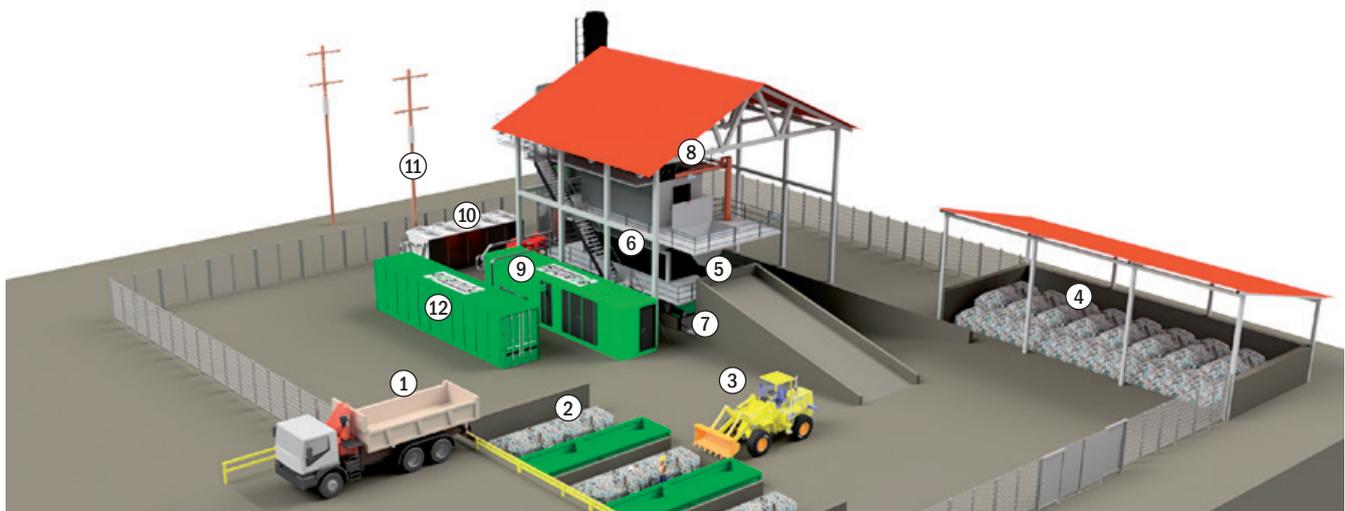
Your waste disposal site is turned into a profitable business by selling electricity to the main grid and, where applicable, excess heat to e.g. nearby industries, houses or hospitals. The heat can also be used to run a fresh water generator producing drinking water from contaminated water.

Flexible and future-proof

Againty's plants have a modular design, allowing an increased capacity as the demand increases. This secures a long-term waste solution, without locking up large investment capital from the start.



Alternative plant layout. With this indoor design, the ventilation air is passing through the incinerator to not affect the surroundings with potential odours.



1 The waste disposal truck dumps the waste at the sorting ramp. The ramp manager tells the next truck where to unload and closes the gate when personnel is sorting the waste.

2 The wheel loader flattens the pile for easy access and sorting/recycling of different materials. At least glass, metals, electronics, and batteries should be sorted and thrown into the yellow containers for recycling.

3 The wheel loader moves the waste directly to the boiler or to the intermediate storage area. The volume of the waste is decreased by compressing it against the wall.

4 The intermediate storage area should be sized to handle at least 72 hours of waste under roof for weather protection in order to avoid the wind moving the waste and the rain to increase the moisture of the waste.

5 The automatic inlet feed system compresses the waste to remove liquids and feed the waste to the boiler at a controlled rate.

6 The modern three-zone boiler is constantly controlled by the operator with help of measurement devices and cameras to ensure an optimal efficiency and low emissions.

7 The ash is automatically fed into containers.

8 The modern electrostatic filter and/or sock filter removes fly ash and small impurities from the exhaust gases.

9 The ORC turbine system is connected to the hot water generated from the waste boiler. Heat energy in the hot water is turned into electricity which is fed to the grid.

10 If there is no usage for hot water, heat is given off to the atmosphere by fans or to a nearby river or lake.

11 The waste-to-energy plant can be designed for both on-grid and off-grid operation.

12 Container with other technical equipment and tools.



The ORC system – from heat to electricity

Againity's ORC 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 of a vaporized internal working medium. The rotating turbine drives a generator that produces electricity.

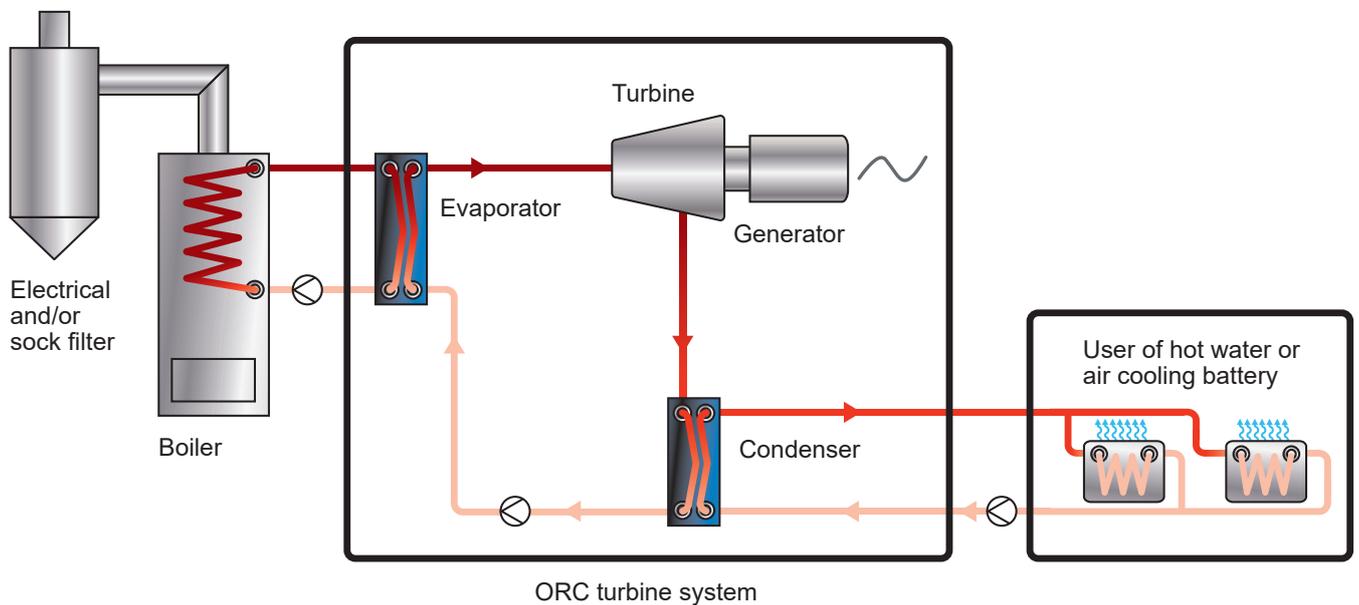
The excess heat from the ORC turbine system can be utilized as hot water for any of the applications described on the bottom of the page.

Quality first

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



Flow chart of the waste-to-energy plant



Other options for usage of excess heat from the system

Air/water cooling

The excess heat from the ORC turbine system is cooled by a nearby river or an air cooling battery.

Delivery of freshwater

A freshwater generator turns contaminated water into drinking water with a vacuum distillation process.

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Againity is committed to creating sustainable energy solutions with innovative and robust technology.



Modular waste incineration from 5 MW and up

The modular waste incinerators and ORC systems allow adjustment of plant size according to local demand. When demand increases in the future, additional sets are easily connected. The sizes below are examples of boiler sizes and can be modified for each case.

| Waste-to-energy modules | | | |
|--|-------------|-------------|-------------|
| Waste incineration capacity* | 2.5 tons/hr | 5 tons/hr | 15 tons/hr |
| Maximum heat production | 5 MW | 10 MW | 30 MW |
| Maximum electricity production (net)** | Max 500 kW | Max 1000 kW | Max 3000 kW |
| Voltage*** | 380–415 V | 380–3000 V | 380–3000 V |
| Frequency | 50–60 Hz | 50–60 Hz | 50–60 Hz |

*Varies with waste content and humidity. These figures are based on waste with a heating value of 2.2 MWh/ton.

**Varies with desired temperature of the heat delivered from the plant.

***Other voltages on request.

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