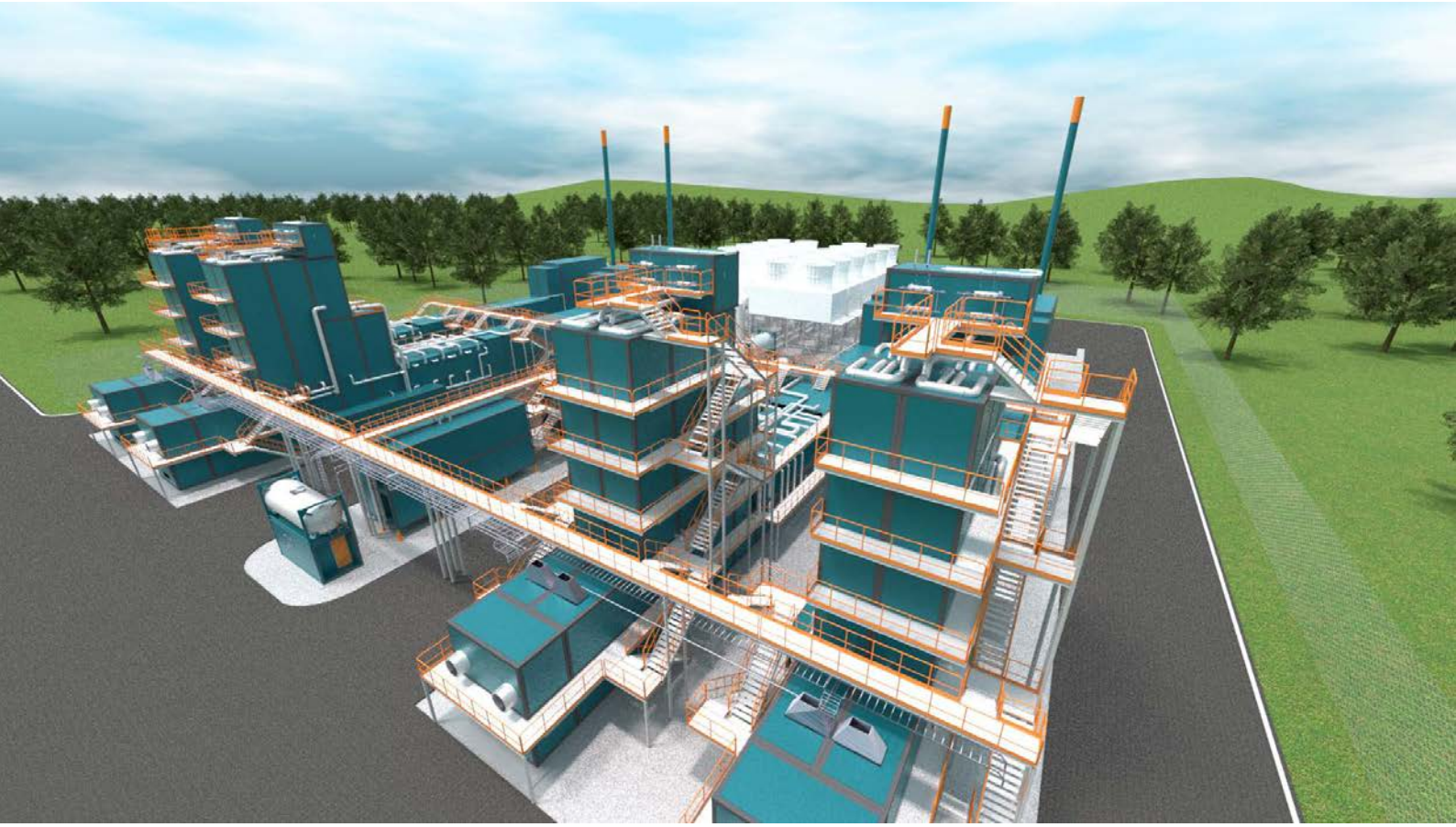
WOIMA

CORPORATION

BROCHURE

BTUX



*waste*WOIMA15

THE MODULAR WASTE-TO-ENERGY POWER PLANT

Municipal Solid Waste (MSW), the more refined Refuse Derived Fuels (RDF, REF, SRF) and other waste fractions are available in abundance everywhere in the world. They offer interesting business opportunities in reuse, recycling and incineration for energy. Yet, waste remains an under-utilized resource, especially in the emerging countries, which would benefit the most of a local energy source. Simultaneously, the solutions reduce the quantity of waste arriving at landfills and improve people's health and living conditions.

Power grids are failing or non-existent in the emerging countries. Waste collection is a challenge and scarce foreign currency is wasted on fuel imports. Therefore, solutions supporting micro-grids and local SMEs, while improving both the state of the environment and the national balance of payments, are highly sought after.

The *waste*WOIMA® relies on a collection area of 100,000 - 500,000 inhabitants, while generating

- electricity
- thermal energy
- potable water

enough for a city of ~20,000 people. Naturally, the energy is also available in the form of steam (400°C / 40 bar) for e.g. industrial processes.

The *waste*WOIMA15 power plant is a robust and modular small-to-medium-scale power plant using 30,000 to 200,000 tons of waste annually, depending on the quality of the waste and the number of WOIMA*lines*. It is designed for a 30-year lifespan in the harshest of conditions. The design is based on 20' and 40' modules, which simultaneously act as

- easily transportable units
- secure enclosures
- installation platform for technical solutions
- protective housing on-site

The WOIMA business model relies on high level of pre-engineering and pre-fabrication work, short construction and installation time on site, simple maintenance and advanced automation requiring very little manpower to operate the plant.

The *waste*WOIMA® power plant's modularity is based on a WOIMA*line* (powerline) ideology. The plant consists of one to four WOIMA*lines* each capable of producing

- 3.7 MW (gross) or 3.2 MW (net) of electricity or
- 2 MW_e (gross) and 10 MW of thermal power or
- 17 t/h of steam (@400°C / 40 bar)

Additionally, there is capacity to produce 200 m^3 of potable water daily, provided a raw water source is available.

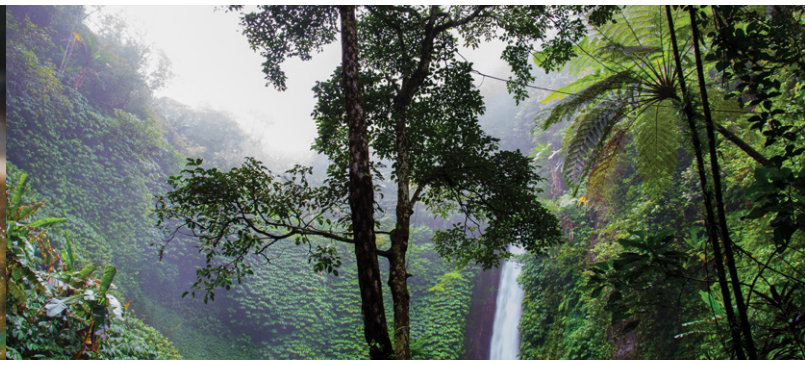
The *waste*WOIMA® is capable of handling a wide range of non-toxic solid waste fuels, such as

- municipal solid waste (MSW)
- refined waste fuels (REF, RDF or SRF)
- industry, commerce and institution waste (ICI)
- construction and demolition waste (CDW)
- agricultural waste (AW) and
- different biomasses, such as EFB, rice husk...

The fuel calorific value range is 7 – 22 MJ/kg with moisture up to 55%. The plant automatically adjusts itself to the variations in fuel quality and quantity to deliver a constant stream of energy.

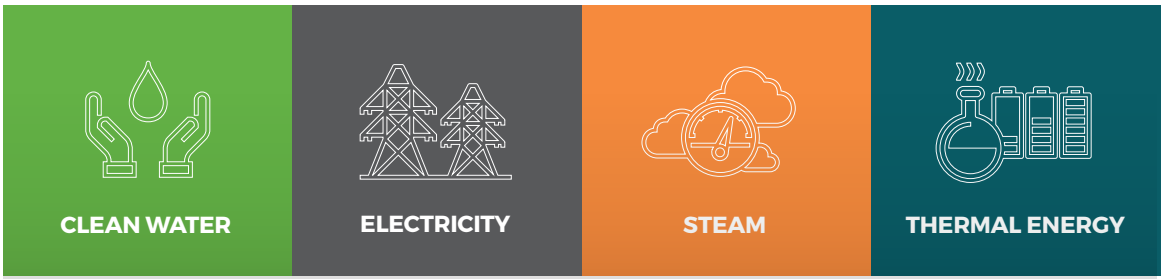
The basic plant design can be complemented with several different standardized auxiliary systems. They are also designed to fit into the modular plant approach. An additional system could be

- an evaporator to produce boiler water and/or safe potable water
- a reverse osmosis installation for demineralized water
- a landfill leachate treatment system
- a flue gas scrubber to utilize the latent heat otherwise lost through the stack
- an Organic Rankine Cycle (ORC) electricity generation module instead of the steam turbine



KEY FACTS

- Easy to build; established on a concrete slab of 1,500 - 5,000 m^2
- Erection and commissioning within 4 months of delivery
- Simple operation; robust and proven technology
- Safe operation under any conditions
- Easy exchange of broken or worn-out plant components
- Remote monitoring of plant performance
- Capable of producing electricity, thermal energy and potable water
- Complies with the EU Emission Standards



WOIMA

CORPORATION

CONTACT INFORMATION

Henri Kinnunen
Chief Executive Officer
henri.kinnunen@woimacorporation.com
+358 40 835 8974

Tapio Gylling
Chief Operations Officer
tapio.gylling@woimacorporation.com
+358 50 347 2799

Tapani Korhonen
Chief Technology Officer
tapani.korhonen@woimacorporation.com
+358 44 989 1513

Joona Piirto
Chief Project Officer
joona.piirto@woimacorporation.com
+358 50 387 9883

POSTAL / VISITING ADDRESS
Virtaviiva 8F
65320 Vaasa, FINLAND

www.woimacorporation.com
info@woimacorporation.com

YOUR LOCAL CONNECTION