WOIMA

CORPORATION

BROCHURE

***waste*WOIMA®**
Waste-to-Energy
Power Plant

*waste*WOIMA®

THE MODULAR WASTE-TO-ENERGY POWER PLANT

Today, soaring energy prices and drive towards green power generation are affecting everyone across the globe. Yet, one potential source of energy is still being overlooked in many markets. Recently, the 3R methodology (reduce, reuse, recycle) has significantly reduced excess waste. But still hundreds of millions of tons of usable waste fuel ends up in landfills or dumpsites every year. The modular *waste*WOIMA® power plant offers a simple fast-track solution for both waste management and power generation in one easy-to-deploy package.

The modular *waste*WOIMA® power plant is a small-to-medium-scale solution for smaller cities, or for larger metropolises as a decentralized waste management and power generation solution. The plant has been pre-engineered, prefabricated and tested at our workshop to enable fast, on-time and high-quality project deliveries anywhere in the world. The standardized plant sizes are 10, 15 and 20MW$_{fuel}$, but any size below 20MW is possible, while still adhering to the modular design principle.

The plant is available in three configurations similar to the larger plants: electricity only, CHP or thermal. And thermal can be either heating or cooling. Naturally, a combination of different energy commodities is also possible. The modular nature of the power island enables changing the configuration easily and cost-efficiently.

The *waste*WOIMA® power plant consists of one or several WOIMA*lines* (boiler islands), each using 25,000 to 60,000 tons of waste annually, depending on the chosen fuel power and the quality of the waste. The design is based on sea-container-sized 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 de-risking the project delivery through high level of pre-fabrication, locally sourcing the unsophisticated components, as well as short construction and installation time on site. Simple maintenance methods and advanced automation require very little manpower thus saving operating expenditure.

The *waste*WOIMA® power plant's modularity is based on a WOIMA*line* (boiler island) ideology. The plant consists of one to four WOIMA*lines* with the following parameters

- thermal efficiency 89%
- electrical efficiency 25%
- CHP efficiency 19% electricity / 68% thermal

The thermal energy is available as superheated steam (400°C@40 bar(g)) or any steam/hot water quality below that.

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)
- industrial and commercial waste (ICI)
- construction and demolition waste (CDW)
- agricultural waste (AW)
- waste wood and
- different biomasses, such as EFB, rice husk..

There are two grate options available depending on the calorific value of the fuel

1. Air-cooled grate for low calorific value waste fuels with LHV between 7 and 17 MJ/kg
2. Water-cooled grate for high calorific value waste fuels with LHV between 14 and 24 MJ/kg

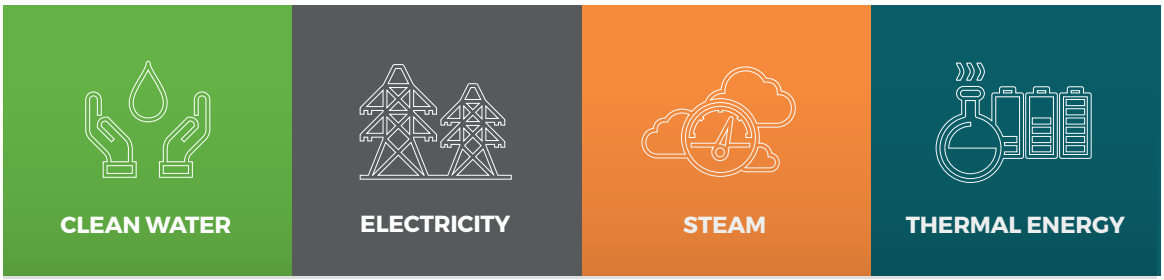
The maximum moisture of the waste fuel is 55%. The plant automatically adjusts itself to variations in fuel quality and quantity to deliver a constant stream of energy.

The basic plant design can be complemented with several different standardized auxiliary systems designed to fit into the modular plant approach

- a water plant for water purification
- a landfill leachate treatment system
- a flue gas scrubber to utilize the latent heat otherwise lost through the stack
- a waste pre-treatment solution recycling valuable raw materials

KEY FACTS

- Easy to build; established on a concrete slab of 1,500 - 5,000 m²
- Erection and commissioning within four 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



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