



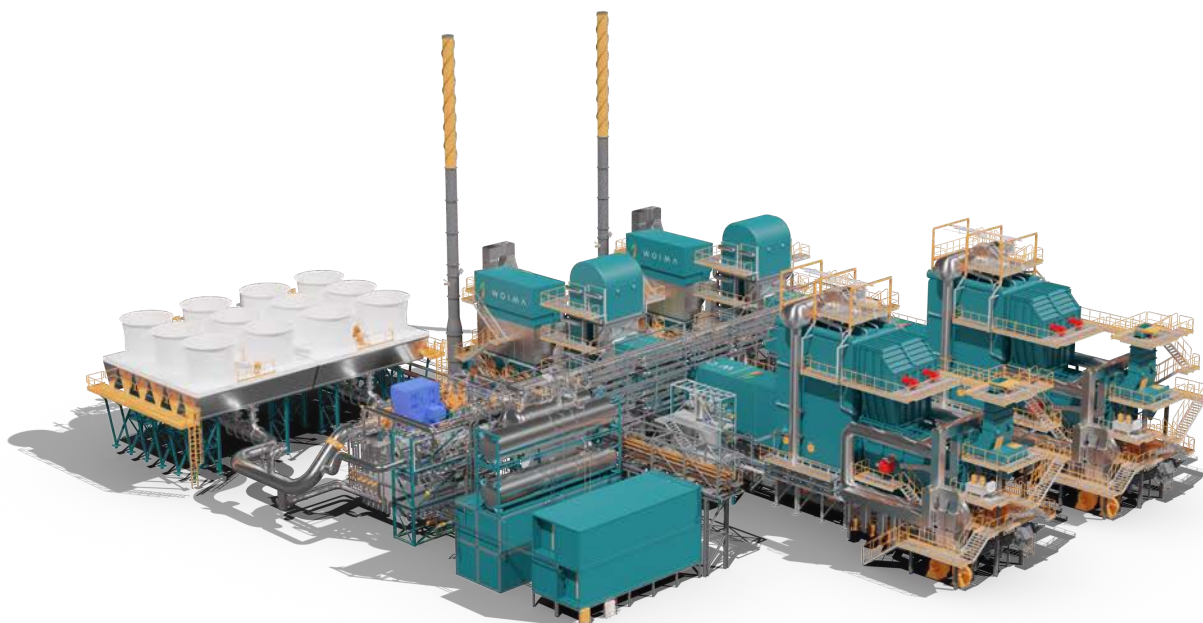
W O I M A

CORPORATION

## USE CASE



WASTE-TO-ENERGY-TO-WATER



## WASTE-TO-ENERGY-TO-WATER CONCEPT

Over three billion people across the globe are suffering from lack of clean drinking water. Close to one billion have no reliable water service at all, and over two billion depend on contaminated water causing diarrhea, cholera, dysentery, typhoid, and polio leading to over one million premature deaths annually. However, clean water production with modern technology is relatively easy and cheap. The waste-to-energy-to-water concept makes use of the abundantly available, but under-utilized, energy hidden in every-day trash in the potable water production.

The main technologies used to produce potable water are Reverse Osmosis (RO) using membranes and Multi-Effect Distillation (MED) using a steam and a series of evaporators. Together these enable the use of the full thermal power output of the *wasteWOIMA*® plant in the waste-to-energy-to-water concept. The technologies are most efficient in desalination, i.e. purifying sea water, but are applicable to contaminated water as well. The beauty of the concept lies in the use of locally available free fuel to create high value for local people; potable water.

A single *WOIMAline wasteWOIMA*® plant with a thermal output of 13MW is capable of producing over 500m<sup>3</sup> of potable water per hour. This serves the needs of up to 200,000 people, coincidentally the same number of people generating enough waste to feed the plant. Capacity can be easily increased with additional *WOIMAlines*. Both new waste and landfill-mined waste are acceptable fuels for the plant. Landfill-mining requires a waste pre-sorting facility that also supports the recycling of e.g. metals, glass and plastics.

The *wasteWOIMA*® waste-to-energy power plant, as well as the water treatment facility, design is based on standard 20' and 40' container-sized modules, which simultaneously act as

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

There is no buildings in the design causing additional costs or slowing down the erection process. The modules are simply bolted together to form the operational waste-to-energy-to-water, or *waterWOIMA* plant. All the modules have been designed with efficient and fast transportation, erection, dismantling and relocation in mind.

The *waterWOIMA* plant project can be planned as a temporary solution. Once more permanent solutions are in place, such as 3R and a municipal water treatment plant, the *waterWOIMA* facility can be dismantled and relocated. Relocation protects some 90% of the original investment; only the concrete foundations are left behind.

One WOIMAl<sup>ine</sup> uses some 30,000 to 50,000 tons of waste fuel per annum. Different waste streams, including MSW, RDF, agrowaste, industrial waste, landfill-mined waste and similar can be mixed. This translates to over 500m<sup>3</sup>/h in potable water production, i.e. ~100m<sup>3</sup> per ton of waste.

Up to four WOIMAl<sup>ines</sup> and water treatment modules can be interconnected to form a larger *waterWOIMA* plant. The plant is easily delivered, quick to install, cost-efficient to run and simple to maintain offering all stakeholders significant benefits. Relocation to a close-by site can be done within four-to-six months.

## BENEFITS:

### WASTE MANAGEMENT

- Creating new business potential
- Simplifying waste logistics
- Reducing environmental impacts
- Matching future regulations
- Postponing landfill investments
- Green image benefits

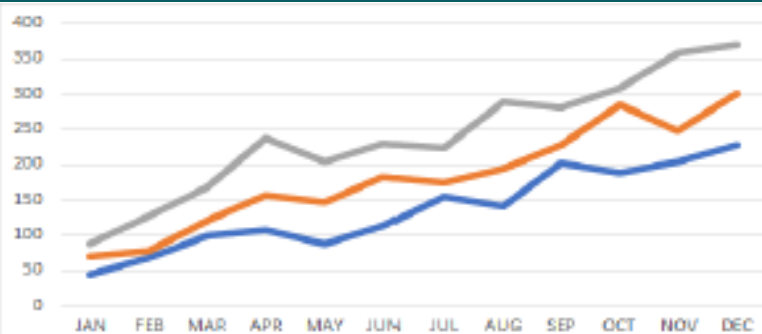


### POWER & UTILITY

- Decentralizing power generation
- Enabling off-grid solutions
- Offering fuel & production flexibility
- Harnessing endless fuel source
- Utilizing carbon credit schemes
- Fast plant delivery

### INVESTORS

- Excellent return on investment (ROI)
- Scalable business model
- Diversified investment portfolio
- Vendor arranged funding
- Fast project roll-out
- Plant relocation option



### OTHER STAKEHOLDERS

- Turning waste into local welfare
- Health & environmental benefits
- Local reliable energy supply
- Educational & job opportunities
- Improving living conditions
- Implementing development funding



WOIMA

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#### YOUR LOCAL CONNECTION

