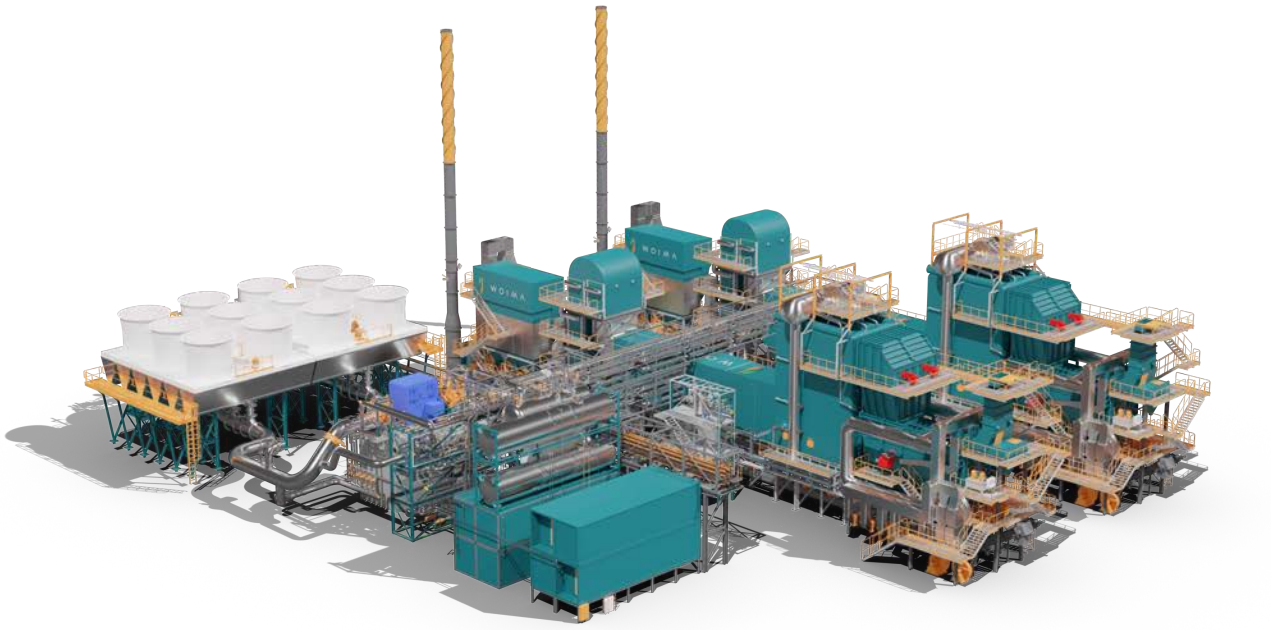
WOIMA

CORPORATION

USE CASE

INDUSTRIAL
WASTE-TO-ENERGY



INDUSTRIAL WASTE STREAMS TO ENERGY

Industrial processes generate some 40 billion tons of solid and liquid waste fractions across the globe annually. This is more than half of all the generated waste. These waste streams require huge investments for processing and cleaning in order to protect people and the nature. Our *waste*WOIMA® power plant offers a simple answer to the problem by recycling waste into energy. The robust grate incineration accepts a wide range of solid and liquid waste streams, provided they are flammable. The high incineration temperature destroys most harmful compounds and the flue gases are treated carefully to prevent air emissions.

The industrial waste streams consists of different types of liquid and solid production residues and sidestreams. One significant group are the organic and inorganic sludges. All of these require strict measures in their treatment and final deposition to protect the environment. The *waste*WOIMA® power plant offers one alternative in the industrial waste treatment, while simultaneously generating local energy, both electricity and thermal, for the industrial processes. The different waste streams can be mixed prior to feeding them onto the grate to create a homogeneous fuel, or the flammable liquids can be sprayed on top of the solid fuels.

The *waste*WOIMA® power plant can be installed at the waste collection or transfer station to utilize a wide range of industrial wastes, or as a single fuel solution at the production site. One typical, and abundantly available, fuel is the oil-drilling sidestream; oil mud. It is extremely hazardous to the environment, but with a high calorific value enabling easy incineration.

The *waste*WOIMA® power plant 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 power plant building causing additional costs or slowing down the erection process. The modules are simply bolted together to form the operational power plant. All the modules have been designed with efficient and fast transportation, erection, dismantling and relocation in mind.

The *waste*WOIMA® power plant project can also be planned as a temporary solution. Once there are more efficient recycling processes in place the facility can be dismantled and relocated, or assigned for new waste streams. Relocating the plant protects some 90% of the original investment. Only the concrete foundations are left behind.

One WOIMA*line* (boiler island) uses some 30,000 to 60,000 tons of industrial waste per annum. These wastes can be complemented with e.g. REF, RDF, SRF or liquid/gaseous support fuels for higher output. The outputs per 15 MW_{fuel} WOIMA*line* are

- 3.7 MW_e of electrical power or
- 2.4 MW_e / 10 MW_{th} in heating mode or
- 2.4 MW_e / 6 MW_{th} in cooling mode

Up to four WOIMA*lines* can be interconnected to form a larger *waste*WOIMA® power 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 wellbeing
- Health & environmental benefits
- Local reliable energy supply
- Educational & job opportunities
- Improving living conditions
- Implementing development funding

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