## Clean Energy Solutions

All components are pre-installed, investors can achieve fast returns. This not only simplifies installation, but also allows for very quick start-up, so you can benefit immediately. The system offers great flexibility because it provides a modular design and the ability to activate biomass power plants for maximum performance. Containerized power generation systems can be optimally tailored to unique situations and environments. The broad power capacity allows for further customization.



### EXPERT MEN SUPPORT

and timely support, ensuring engineering and design or liquid waste produced and extremely low NOx, CO, of the unique project and smooth installation, commissioning and operation of Pyrogreen.



### ENVIRONMENTAL FRIENDLY

Our specialized engineers provide comprehensive Fully automated, high thermal efficiency without tar



#### SMART MODULAR IIII DESIGN

Containerized components, globally accessible for marine and land transportation.

Support on-demand capacity expansion (one module: from 100kW to 1000kW).

No need of factory building, On-site installation only revenue. takes 7-10 working days.



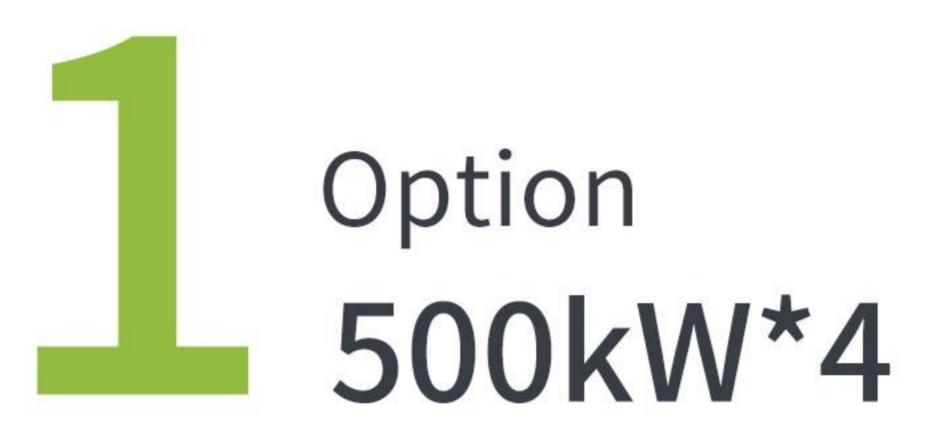
## © CARBON CREDIT

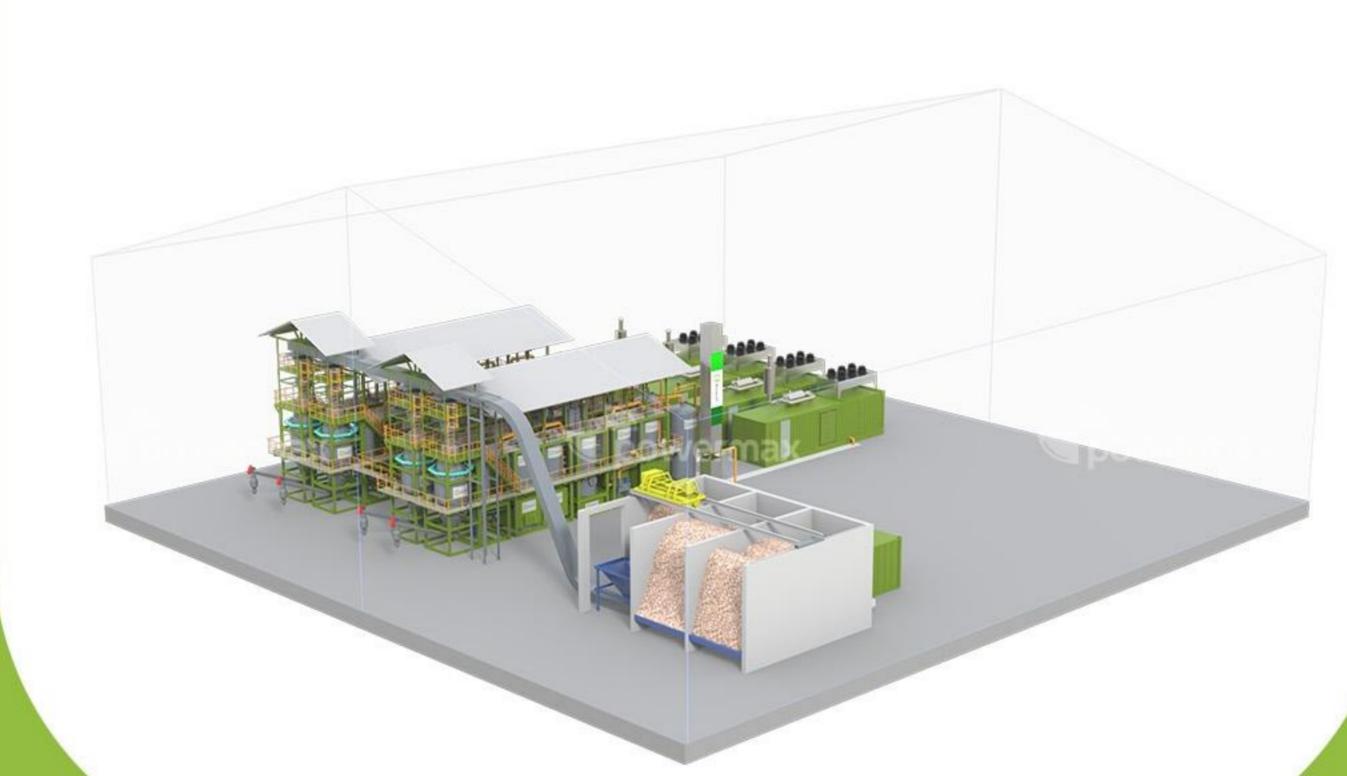
Biochar is recognised globally as a premium carbon credit for its role in carbon reduction and sequestration. Pyrogreen produces all kinds of biochar with low H/C ratio and high quality which is suitable for agricultural, environmental and industrial use, thus generating carbon credit while achieving extra

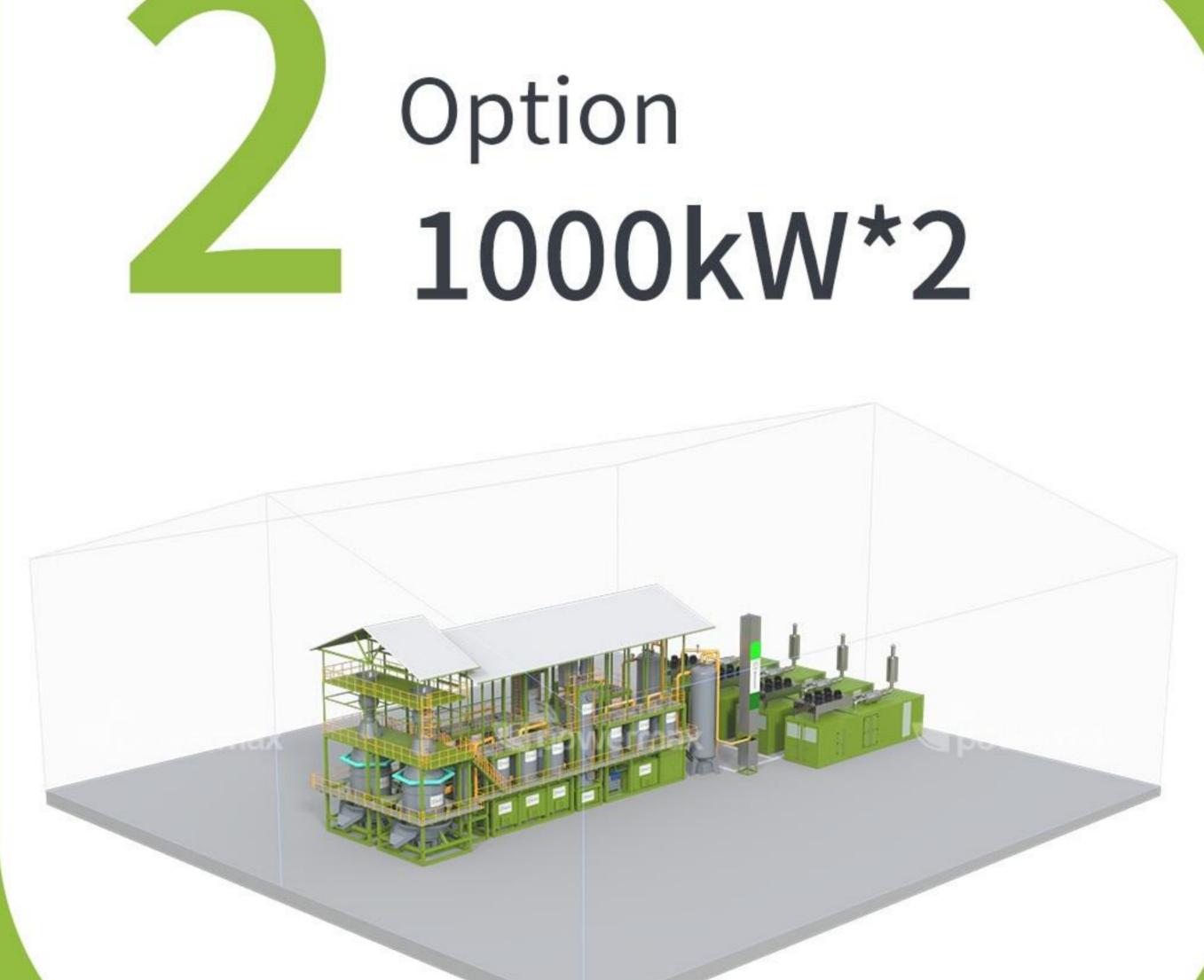


## Different Power Generation Schemes (Taking 2MW as An Example)

The Powermax Biowatt Compact Biomass Gasification power generation systems are an "fast-to-use" solution that quickly meets investors' & users' needs for biomass power generation and heat supply. The Compact skid-mounted design is suitable for underdeveloped areas because it can operate off - grid.







- Easy installation with factory pre-assembly.
- Start / stop at any time.
- Compact and space-saving design.

- Complete solution for biomass power generation and heat
  No need for factory building, suitable for many countries. System components such as transport system, de-ashing
  - system, or fuel dryer available in combination with all Powermax equipment.















#### **Contact Us**

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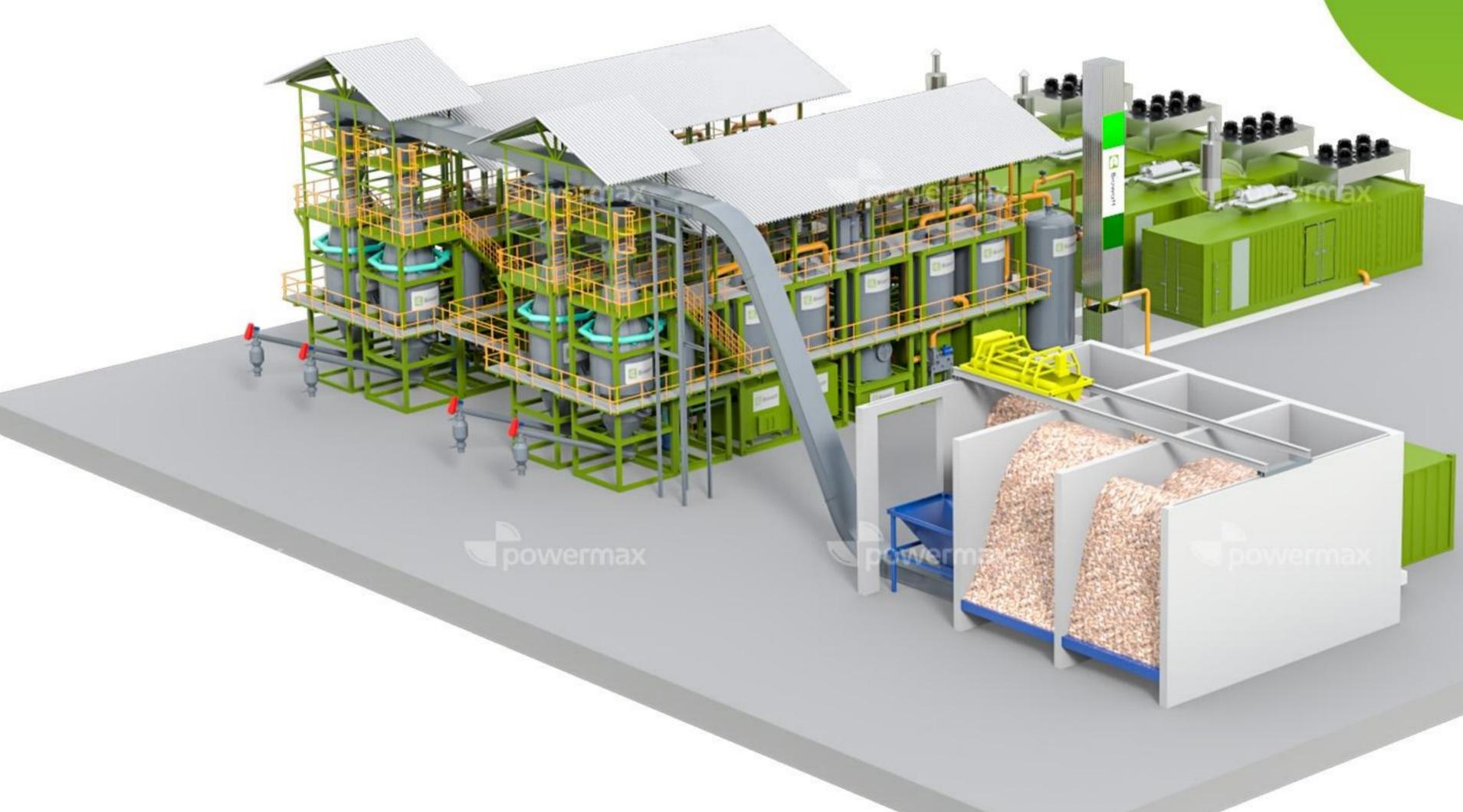


### Compact Biomass Gasification

# POWER PLANT

POWERMAX BIOWATT® 0.5-100MW COMPACT BIOMASS GASIFICATION POWER PLANT SOLUTION

> CHP/ Carbon offset / Automatic control / Construction only takes 7-10 working days











Biowatt100

Biowatt300

Biowatt500

Biowatt1000



Powermax Biowatt®

Compact Biomass Gasification Power Generation System

**Biomass Conversion into Clean Energy** 

## What happens in the Biowatt gasification system?



#### **Types of Biomass &** Waste that can be Used in Biowatt System:

Agriculture and forestry products and wood processing remains (including rice husk, wood powder, branches, offcuts, cron straws, rice straws, wheat straws, cotton straws, fruit shells, coconut shells, palm shells, bagasse, corncobs and etc.)



#### By product - Tar:

Energy source: Tar can be used as a liquid fuel. After proper treatment, it can be burned to generate electricity or as a substitute for other energy sources.

Asphalt production: Tar can be used as one of the raw materials for asphalt and is widely used in road construction and waterproofing materials.

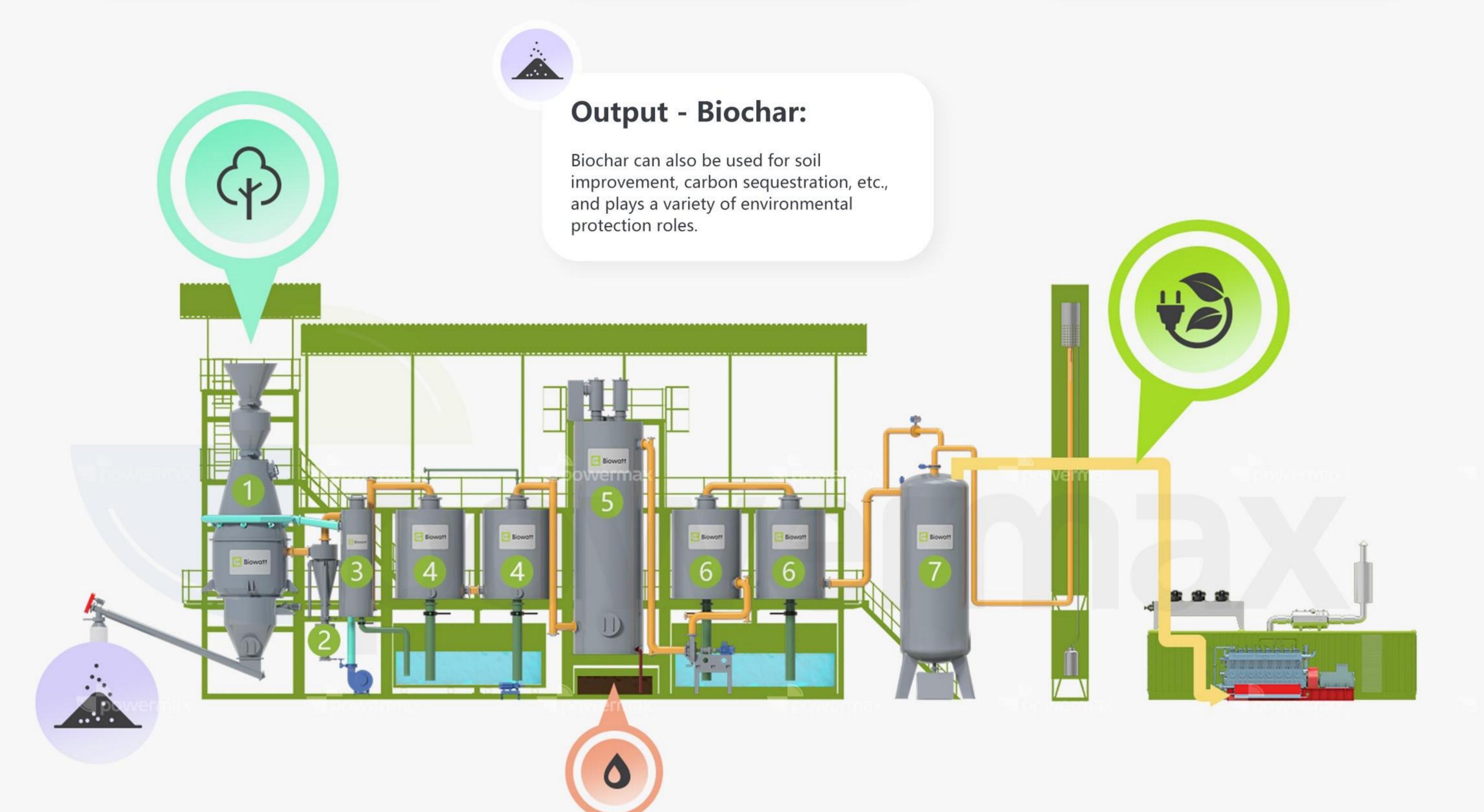


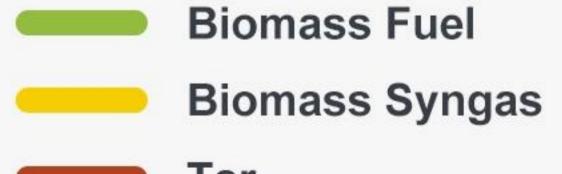
#### **Application of Biowatt:**

Power generation: Cogeneration and stand-alone power

#### Thermal application:

**Chemical industry:** Methanol, synthetic ammonia and other chemicals







Cooling Water Air



#### 4 Intercooler I

The first temperature reduction treatment is performed on the combustible biomass syngas generated.

#### Gasifier

biomass raw materials to gas flow. generate combustible gases such as carbon monoxide and hydrogen.



gas purification.

The second temperature The high-voltage electric field action electrically reduction treatment is percharges the tar and dust in formed on the combustible the gas and adsorbs them biomass syngas generated. on the electrode plates to achieve the objective of

#### Cyclone

Remove particles dust from

Intercooler II

#### Air exchanger

Heating air gasification agent to improve gasification effi-

#### **Buffer tank**

It buffers combustible syngas and ensures that electricity can be output with relative

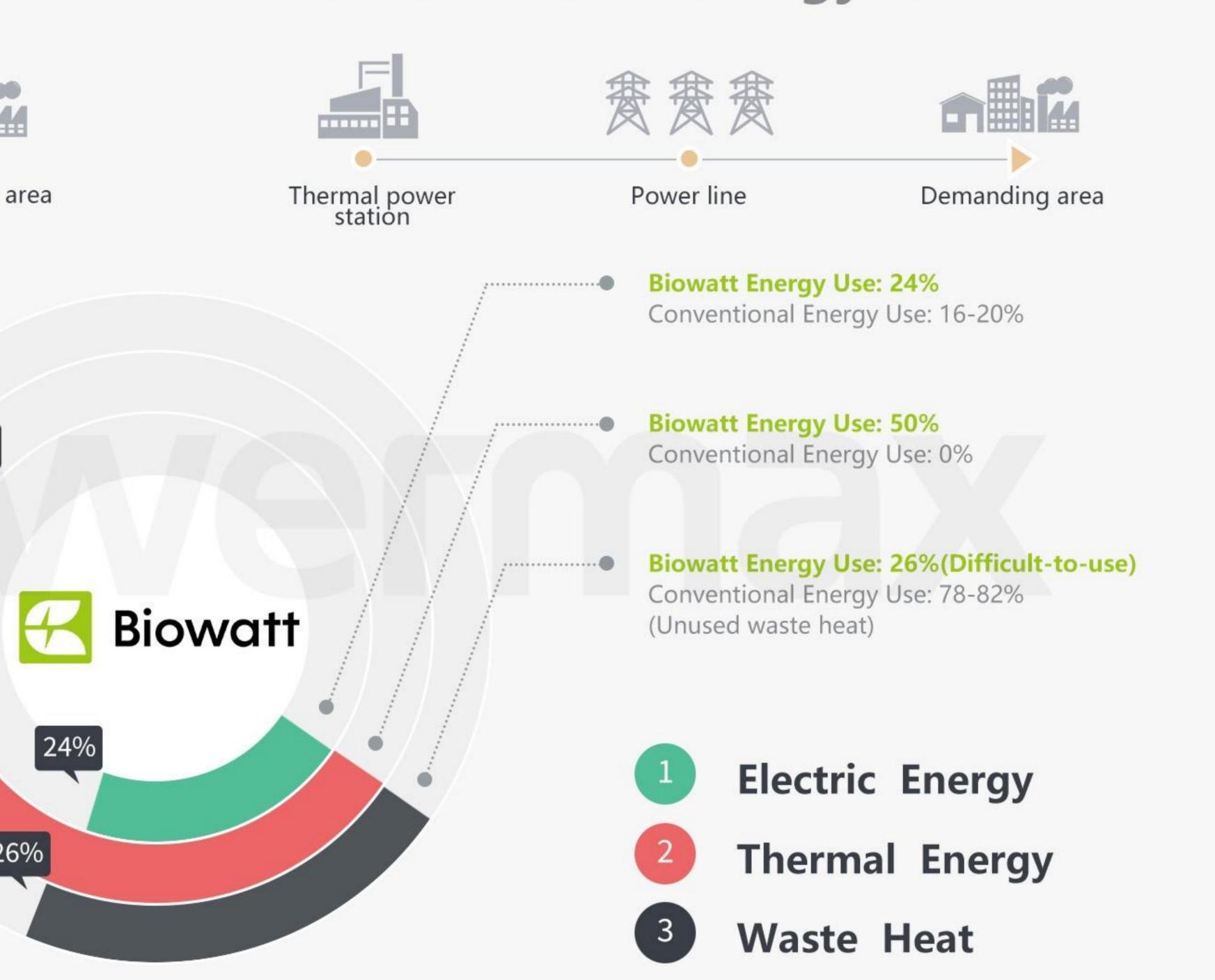
**Product Advantages** 

## What can be obtained in the Biowatt gasification system?

#### **Biowatt Energy Use:**



#### **Conventional Energy Use:**



Biowatt100

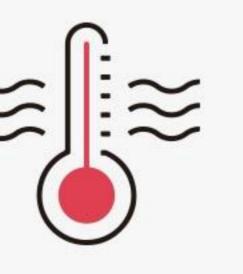
Biowatt Achieves an

**Energy Efficiency of** 

#### **Combined Heat and Power (CHP)**

CHP, also known as combined heat and power, is an efficient, clean, and reliable way to generate electricity and thermal energy from a single fuel source. Cogeneration can significantly improve a facility's operating efficiency and reduce energy costs.





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208<sub>KW</sub>

**624**<sub>KW</sub> Biowatt300 Biowatt500

Biowatt1000

1,040<sub>KW</sub>

#### **Carbon Offset**

Compared to coal and petroleum resources, biomass gas is a clean energy source. Zero carbon dioxide emissions during the process that produces small amounts of NOx and SOx. Tar, dust, and condensate are comprehensively treated after collection through the facility.





#### Reduce CO, Annually Equivalent to Approximately

740 <sub>t</sub>	17,000 trees
2,200t	51,000 trees
3,700 <sub>t</sub>	85,000 trees
7,400t	170,000 trees

#### Taking 2MW as An Example

### Hybrid Grid/Battery Energy Control Platform

#### Off-grid Power Management

- 1 Powermax Biowatt® Compact Biomass Gasification power Generation systems
- 2 User
- Solar Energy
- 4 Energy Storage Wind Energy
- Syngas Generator Set

#### Benefits at A Glance:

- Increased reliability
- Increased gas efficiency
- Fewer emissions and better CO<sub>2</sub> footpring
- Enhanced flexibility and fuel independe
- Wide range of operating modes
- Reduced cost of energy

### **Grid-tied Power Management**

- 1 Powermax Biowatt® Compact Biomass Gasification power Generation systems
- 2 User
- Power Grid
- Solar Energy
- Wind Energy
- 7 Syngas Generator Set

Energy Storage

#### Benefits at A Glance:

- Low to no carbon emissions
- Enhanced flexibility and fuel independent
- Wide range of operating modes
- Efficient and reliable power supply
- Reduced cost of energy





Powermax is a green & clean energy company.

Powermax has a long experience in producing and supplying environmentally friendly and high performing gasification systems and gas generator sets. We specialize in biomass, coal and waste gasification to energy systems and have a company history of 30 years.