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 SUPPORT

Our specialized engineers provide comprehensive and timely support, ensuring engineering and design of the unique project and smooth installation, commissioning and operation of Biowatt.

ENVIRONMENTAL FRIENDLY

Fully automated, high thermal efficiency and extremely low NOx, CO, Particle Emission.

SMART MODULAR 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 takes 7-10 working days.

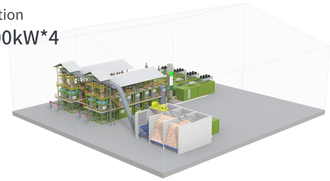
CARBON CREDIT GENERATION

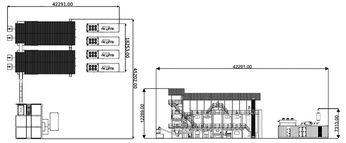
Biochar is recognised globally as a premium carbon credit for its role in carbon reduction and sequestration. Biowatt produces all kinds of biochar with low H/C ratio and high quality which is suitable for agricultural, environmental and industrial use, thus generating carbon credit while achieving extra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

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

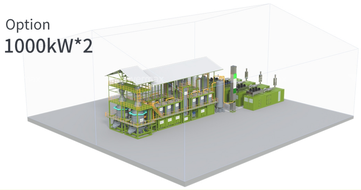
The Powermax Biowatt Compact Biomass Gasification power generation systems are an "fast-to-use" solution that quickly meets investors' & users' needs for biomass power generation and heat supply. The Compact skid-mounted design is suitable for underdeveloped areas because it can operate off - grid.

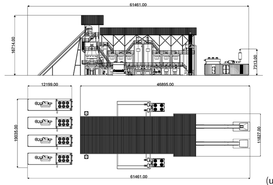
1 Option 500kW*4





2 Option 1000kW*2





- Complete solution for biomass power generation and heat supply.
- Easy installation with factory pre-assembly.
- Start / stop at any time.
- Compact and space-saving design.
- 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.

Customers

GLOBAL EARTH · SACURN · Karimun Power · DEWA COCO

Contact Us

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2026/05/12

ISO · SGS · CE

Compact Biomass Gasification POWER PLANT

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

Isometric pre-approved equipment

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

24/7 CFE (Carbon Free Electricity)

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.

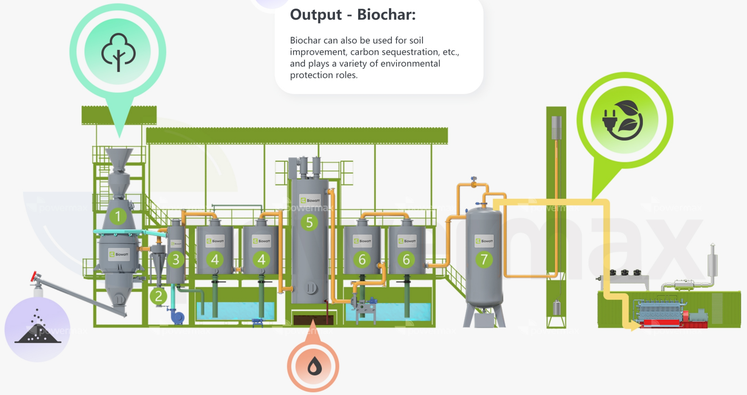
Asphalt production: Tar can be used as one of the raw materials for asphalt and is widely used in road construction and waterproofing materials.

Application of Biowatt:

Power generation:
Cogeneration and stand-alone power supply
Thermal application:
Regional and industrial heating
Chemical industry:
Methanol, synthetic ammonia and other chemicals

Output - Biochar:

Biochar can also be used for soil improvement, carbon sequestration, etc., and plays a variety of environmental protection roles.



- Biomass Fuel
- Biomass Syngas
- Tar
- Cooling Water
- Air
- Biochar

1 Gasifier
Pyrolysis and gasification of biomass raw materials to generate combustible gases such as carbon monoxide and hydrogen.

2 Cyclone
Remove particles dust from gas flow.

3 Air exchanger
Heating air gasification agent to improve gasification efficiency.

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

5 ESP
The high-voltage electric field action electrically charges the tar and dust in the gas and adsorbs them on the electrode plates to achieve the objective of gas purification.

6 Intercooler II
The second temperature reduction treatment is performed on the combustible biomass syngas generated.

7 Buffer tank
It buffers combustible syngas and ensures that electricity can be output with relative stability.

Product Advantages

What can be obtained in the Biowatt gasification system?

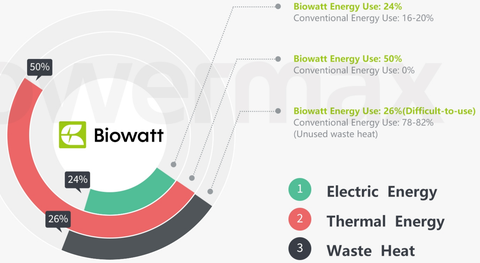
Biowatt Energy Use:

EFFICIENCY

74 %

Biowatt Achieves an Energy Efficiency of 74%.

Conventional Energy Use:



BIOWATT

	Combined Heat and Power (CHP)		Carbon Offset	
	Electric Energy	Thermal Energy	Reduce CO_2 Annually	Equivalent to Approximately
Biowatt100	100KW	208KW	740t	17,000trees
Biowatt300	300KW	624KW	2,200t	51,000trees
Biowatt500	500KW	1,040KW	3,700t	85,000trees
Biowatt1000	1,000KW	2,080KW	7,400t	170,000trees

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.

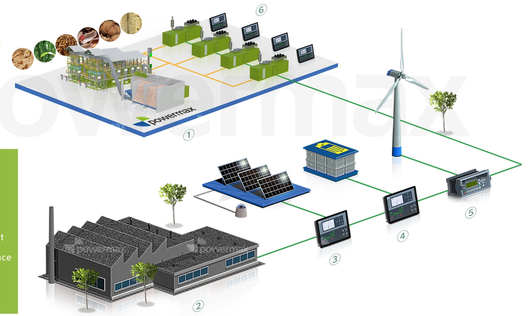
Compared to coal and petroleum resources, biomass gas is a clean energy source. Zero carbon dioxide emissions during the process that produces small amounts of NOx and SOx. Tar, dust, and condensate are comprehensively treated after collection through the facility.

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
3. Solar Energy
4. Energy Storage
5. Wind Energy
6. Syngas Generator Set

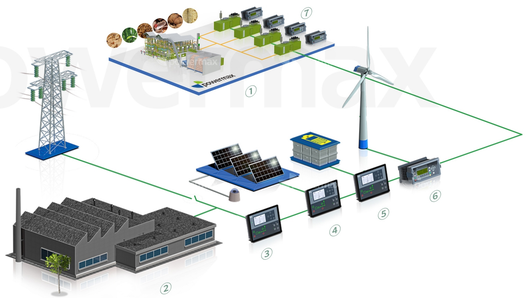


Benefits at A Glance:

- Increased reliability
- Increased gas efficiency
- Fewer emissions and better CO_2 footprint
- Enhanced flexibility and fuel independence
- Wide range of operating modes
- Reduced cost of energy

Grid-tied Power Management

1. Powermax Biowatt® Compact Biomass Gasification power Generation systems
2. User
3. Power Grid
4. Solar Energy
5. Energy Storage
6. Wind Energy
7. Syngas Generator Set



Benefits at A Glance:

- Low to no carbon emissions
- Enhanced flexibility and fuel independence
- Saves fuel
- 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 40 years.