

What Is Biomass?

In the field of energy, biomass is any organic matter that can be converted into heat, electricity or biofuels.

It can take the form of forest residues like wood, sawdust or bark / household or industrial waste / agricultural residues like straw, trees or manure / or specific agricultural crops like sugar cane, beet or rapeseed.

How do you turn biomass into energy?

Produce heat = COMBUSTION

Example: A wood-burning heating system.

Produce electricity = COMBUSTION

Example: A waste-to-energy plant.

Produce biofuels

FERMENTATION

Ethanol can be made by the alcoholic fermentation of glucose or starch. Both of these substances are found in sugar cane and beet.

Produce biofuels

METHANATION

Biomass is broken down by bacteria, creating biogas. It can also be converted into liquid hydrocarbons.

Biomass could cover 10% of the world's energy needs.

Disadvantages:

All forms of combustion release nitrogen oxide and microparticles.

It costs a lot to transport and convert the materials.

The energy yield can be quite low.

It takes up arable land otherwise used by the agri-food industry, causing food prices to rise.

Advantages:

It is carbon neutral and fully renewable.

It plays a role in treating and destroying waste.

It can create jobs.

In short:

Biomass = organic matter convertible into energy.

Heat and electricity = production by combustion.

Biofuels = production by fermentation or methanation.

Disadvantages: Air pollution – High costs – Low energy yield – Competition with agri-food

Advantages: Carbon neutral – 100% renewable – Waste treatment – Job creation