

Overview of biomass energy

Biomass energy is a type of renewable energy derived from organic matter, such as plant material, agricultural waste, forestry residues, and municipal solid waste. It is a form of carbon-neutral energy, as the carbon dioxide emitted during combustion is offset by the carbon dioxide absorbed during the growth of the plants used to produce the biomass.

Types of biomass energy sources

Several types of biomass energy sources can be used to produce renewable energy, including:

- **Wood and wood waste:** Wood and wood waste are the most common biomass energy sources. This includes everything from forestry residues like sawdust and bark to urban wood waste like old furniture and pallets.
- **Solid waste, or rubbish,** can be processed to extract organic materials that can be used to produce biogas through anaerobic digestion.
- **Landfill gas and biogas:** Landfill gas is a byproduct of decomposing organic waste in landfills. It is primarily composed of methane and can be captured and used as a renewable-energy source.

Pros of biomass energy

- **Renewable:** Biomass is a renewable-energy source as it can be replenished through sustainable forestry practices and agricultural practices.
- **Carbon-neutral:** Biomass energy is considered carbon-neutral as the carbon dioxide emitted during combustion is offset by the carbon dioxide absorbed during the growth of the plants used to produce the biomass.
- **Land use:** Large-scale biomass production can compete with food production and other land uses.

Cons of biomass energy

- **Land use:** Large-scale biomass production can compete with food production and other land uses.
- **Emissions:** The combustion of biomass can emit pollutants such as particulate matter and nitrogen oxides.

Examples of biomass energy projects

The 40MW Margam Green Energy Plant is a £160m wood-fired power station, located near Port Talbot, South Wales. It entered commercial operation in 2019, generating renewable electricity via the Grid for homes and businesses.

Trecwn Valley - The plant will generate 25MW of electricity for export to the national grid together with a further 5MW of heat that will be available for use for heating or cooling by businesses.

