

Biomass Energy

What is biomass energy?

Biomass energy is power that is made by the burning of natural substances such as plants (dead or alive) or derivatives from them.

Some sources of biomass energy:



Firewood is collected and burnt largely in the developing world, but the use of wood burning stoves in the UK is a growing trend.



Charcoal is made by slowly baking wood without exposing it to oxygen. It is used extensively in developing countries as a cooking fuel.



Sawdust and field waste briquettes are compacted bricks of dry organic waste materials that can be burnt.



Dung briquettes are made by baking animal dung, usually in the sun before burning them in a stove. Briquettes can be used as a source of biogas if fermented.

Source clockwise from top left: David Stanley; CIFOR; Bryan_T; Engineering for Change.

Advantages of using biomass energy

- Biomass is renewable. By planting trees and vegetation, one can continue to harvest the energy source.
- Biomass is highly abundant and most people have access to a source within their locality.
- Biomass sources such as animal dung and firewood can be collected for free for very poor people, helping them to cook and keep warm without having to pay for expensive technology in their homes.
- Biomass energy can be a sustainable way of disposing of waste organic materials such as rice husks and straw.
- Using biomass energy mean we are less dependent on depleting levels of fossil fuels.
- Poorer farmers may be able to get a second income from selling their organic waste for biomass briquettes.

Disadvantages of using biomass energy

- Burning biomass releases carbon dioxide, a greenhouse gas that contributes towards climate change
- Large areas of forest in some developing countries are being destroyed by local people removing wood for firewood or creating charcoal kilns that use healthy adult trees.
- When used in the home for cooking purposes, smoke inhalation from the burning of biomass can create breathing problems as well as eye and throat infections.
- Biomass has limited capability for electricity production and even less so for widespread use through a national grid.
- Biomass boilers (units which can be installed in a home to produce hot water) and biomass power plants (large scale stations that generally run off wood chip combustion) are expensive to build and run and need high levels of regular maintenance.