

5 Biomass and Biogas Power

Biomass energy is energy generated or produced by living or once-living organisms – animals and plants. Such organisms originally got their energy either directly from the sun (plants by photosynthesis) or indirectly (animals by eating plants). The most common biomass materials used for energy are plants, wood and waste.

Biomass is typically burned in boilers in the presence of oxygen to produce heat, electricity or liquid fuel (biofuel). Biomass is used widely in woodburners in Northern Ireland homes, and use in open fires is still common.

It is estimated that about 46MW of small scale electricity generation comes from biofuels, including biomass, biogas and landfill gas. (www.soni.ltd.uk)

Lisahally Combined Heat and Power station in Londonderry is a wood fuelled energy from waste installation. It became operational in 2015, uses up to 110,000 tonnes of waste wood annually and produces 16MW of electricity and 6MW of heat each year.

The Camphill Community, Clanabogan, Co Tyrone has a wood burning district heating system installed. It heats 75% of the buildings in a sustainable way using renewable energy sources and so reduces oil consumption by 100,000 litres annually.

Biogas is produced from food or animal waste in an anaerobic digester without using oxygen. Some farms have an on farm digester using animal waste or plant matter to generate electricity for home and farm use.

Benefits of Biomass

- A readily available renewable resource

- NI provides ideal conditions for plant growth

- Anaerobic Digestion turns waste into a resource – energy and fertiliser

Disadvantages of Biomass

- Burning produces carbon dioxide, a greenhouse gas

- Energy and other resources are used to harvest and transport wood and in processing and delivering woodchip and pellets for heating

- Energy is necessary to dry wood – wet wood burning creates air pollutants

- Land may be diverted from food production to grow plants as an energy crop



An Anaerobic Digestion plant at the Agri-Food and Biosciences Institute in Hillsborough, Co Down.



Lisahally Power station, Derry