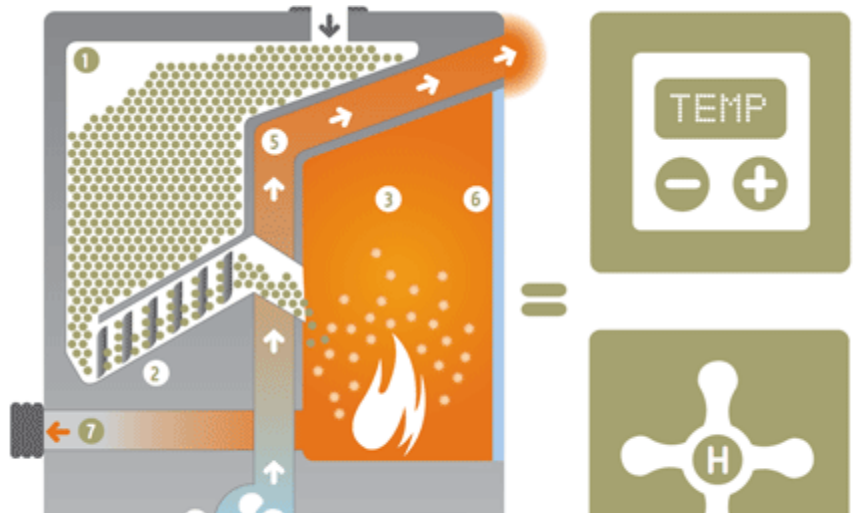


How do biomass systems work?

Biomass systems operate quite simply, with the burning of biomass material to provide space heating and/or domestic hot water. Fuel is loaded into a hopper, or by hand for some log systems and released in a controlled manner into a fire chamber. Heat output can be regulated via a fan, allowing more air to be available to the combusting material for a higher temperature and quicker burning flame when needed. The main waste products from burning biomass are CO₂ gas, and ash. All biomass heating systems require periodic de-ashing, the interval of which depends on the system being used. Heat output can take the form of either hot air blown into the room (and radiating from the device), or via a conventional central heating system. In this case, and for domestic hot water, a back boiler will be a necessary addition to stoves to store the heat from the burning wood. Many biomass systems work best when burning constantly for a number of hours and storing the heat produced in a thermal store for use throughout the day.



Simple biomass stoves produce heat which is transferred to air and used for space heating and in the case of back boiler models, water heating used for central heating and domestic hot water systems in the same way as a gas or oil boilers. Above is the typical operation of a wood pellet boiler. 1. Pellet Hopper, 2. Spiral Conveyor, 3. Combustion Chamber, 4. Fan, 5. Heated air, 6. Glass front, 7. Flue, 8. Ashtray

What components are there?

1. Place to burn biomass: stove/ boiler; and store for fuel
2. Back boiler (optional for stoves)
3. Thermal store (optional)
4. Central heating system (optional)

How much energy can I expect a biomass heating system to produce?

Space heating and domestic hot water requirements may represent as much as 70-80% of the annual energy consumption of your home. Therefore a well designed and installed system could be capable of providing this proportion of your households energy needs.

What are the benefits of biomass?

- Make use of an abundant local supply of energy in Wales
- Create many local jobs and businesses
- Wide range of systems available
- Energy available on demand
- Can be cheaper than or competitive with traditional (fossil) energy sources
- Take advantage of a new government scheme being introduced and **get paid 9p per kwh** of energy produced by biomass (see energy tariffs leaflet)

Suitability

Biomass heating systems are usually easily incorporated into existing heating systems. Your HETAS registered installer should be able to discuss with you the most suitable system to meet your requirements. A cost comparison with the home's current heating fuel should be done. Any financial savings would be dependent on a comparison with alternative fuels and on the specific type of biomass fuel used and the regional price variances.

Maintenance

Biomass systems require regular fuelling and periodic de-ashing. A system inspection should also be carried out every year or several years as required by the equipment installed.

Costs

Costs vary dependent upon systems but are competitive with fossil fuel systems

Internet and **West Wales ECO Centre** leaflets used in creating this. Created by www.calonteifi.org contact calonteifi@gmail.com

