

Biomass Heating

Wood has been a primary source of heat throughout human history. Modern wood burning stoves and boilers are making wood fuel an increasingly efficient and competitive alternative to fossil fuels.

Summary

- There are two main methods of using biomass to heat a property:

Stand-alone stoves providing space heating for a room.
Can be fueled by logs or pellets but only pellets are suitable for automatic feed
Generally 6-12 kW in output
Some models can be fitted with a back boiler to provide water heating.

Boilers connected to central heating and hot water systems.
Suitable for pellets, logs or chips
Generally larger than 15 kW.

- Log-fed systems are generally cheaper, but require more manual handling of the fuel. Wood pellets are a compact form of wood, with high energy density and low moisture content. They are currently more expensive than wood chips, but easier to handle and more suited to smaller stoves. Wood chip systems are well suited to larger boiler systems, and are equipped with an automated hopper.
- The total heat demand (heating and hot water) might be between 10-30kW for a typical 3-bedroom house, and 30-50kW for a farm house.

Site requirements

Space: It is important to have enough space for the system and fuel storage. Stoves take very little room, but a wood chip boiler system will require more space.

Flue: Wood stoves will require a lined flue designed for wood appliances.

Regulations: The installation must comply with all safety and building regulations. On the 1st of May 2005, a new building standards system came into operation in Scotland. All building warrant applications from this date are processed under the Building (Scotland) Act 2003, information on which is set out on the following website: www.sbsa.gov.uk.

The Scottish Building Standards Agency (SBSA) is an executive agency of the Scottish Executive to undertake the national functions related to the building standards system.

Smokeless zones: Wood can be burnt in smokeless zones, but only on exempted appliances.

Planning requirements

If the building is listed, or works change the external line of the building, planning permission may be required. This could be a particular issue in a National Scenic Area. It is recommended that your local authority planning department be consulted before works are carried out.

Capital & Installation costs

Stand-alone automated stoves typically cost between £1,000 - £3,000 installed.

A 15kW wood chip boiler suitable for a 3-bedroom house would cost between £4,000 - £12,000 installed, depending on the system. A manual log-feed system of the same size would be slightly cheaper.

Operation and Maintenance Costs

Before making any commitment, it is important to ensure there is a local supplier of fuel. Local suppliers should be asked to provide current prices for logs, wood chips and pellets. Fuel costs vary. Indicative costs are:

Wood pellets: £130 per tonne

Wood chip: £40-£50

Logs: £40 per tonne

Heating an average sized house will typically require about 2-5 tonnes of pellets, or 6-12 tonnes of logs annually.

Savings

Savings are greatest where wood fuel replaces electric or oil fired heating, and least where wood fuel replaces modern gas central heating. If grants are obtained, payback times may be between 5-10 years.

Sources of Funding Support

Scottish Communities and Householder's Renewable Initiative:

The Energy Savings Trust (EST) and Highlands & Islands Community Energy Company run the Scottish Communities and Householder's Renewable Initiative (SCHRI). Householders can receive up to 30 per cent of the total cost of their project up to a limit of £4,000. Community schemes can receive a maximum grant of £10,000 for a feasibility study and a maximum grant of £100,000 for a capital project. Contact: www.est.org.uk/schri/ or call 0800 138 8858.

Loan Action Scotland:

Loan Action Scotland is funded by the Scottish Executive through the Scottish Energy Efficiency Office in support of Action Energy. Loans may be advanced against a range of energy saving measures to enable companies to take action to reduce their energy bills. It is primarily an energy efficiency scheme, but it may be worth discussing whether biomass heating equipment would be eligible.

The scheme provides interest free loans of £5,000 to £50,000. Loans can have a repayment period of up to five years. The loans are available to companies based in Scotland, with up to 250 employees. Companies must be able to demonstrate that the actions proposed will deliver the energy efficiency benefits claimed. See: www.energy-efficiency.org/howto/help/loan/index.html

Tax Incentive (to be confirmed)

Enhanced capital allowances (ECA) Scheme:

The aim is to encourage businesses to invest in low carbon technologies, and so reduce UK carbon emissions. Biomass boilers are included as energy saving plant and machinery. The ECA scheme is an integral part of the Climate Change Levy Programme, and was introduced by the Finance Act of 2001. Sponsoring organisations are the Treasury, DEFRA and The Carbon Trust.

Enhanced Capital Allowances (ECAs) enable a business to claim 100% first-year capital allowances on their spending on qualifying plant and machinery. All businesses that are subject to UK taxation are eligible, regardless of size, industrial or commercial sector or location.

See: http://www.hmrc.gov.uk/capital_allowances/eca-guidance-pt1.htm

Advice

Energy Savings Trust (EST) business advisers can help small to medium sized businesses make best use of the many energy and resource efficiency schemes provided by the Trust and other government funded organisations. They can also help access tax incentives and interest free loans to help finance improvements.

EST advisers can help you access:

- Free and impartial information and advice.
- Free on-site energy, waste and water audits.
- Practical guides and best practice literature.
- Low carbon, clean fuel and renewable technologies.
- Relevant training and seminars.

Contact: **0845 458 5040**

