Tynedale Renewable Energy Trail

Kielder Garage

Site 1

Warmth from wood pellets

Kielder Garage is owned by Kielder Community Enterprise Ltd (KCEL), a local community business which aims to improve the quality of life of Kielder residents, by promoting job opportunities and village facilities. Among other activities, KCEL runs the local mini-bus service and campsite. Kielder Garage incorporates a small shop selling outdoor equipment and an office, as well as sales of petrol and diesel. Heating the shop was a continual problem - ineffective and expensive - until a modern wood pellet burning stove was installed.

How does it work?

The stove at Kielder Garage is an Italian 5kW Preziosa, and is about 90% efficient, and very clean. By comparison, an open log fire is approximately 20% efficient. Similar stoves can be used in houses, village halls and other small businesses and are available in modern and traditional appearances.

Wood pellets are made from compressed, clean sawdust, and are delivered to site in small sacks. They are easy to handle and store, and are considered to be carbon neutral. This is as long as any trees felled for fuel are replanted, because trees absorb carbon dioxide as they grow. Making pellets from leftover sawdust reduces waste and makes more efficient use of timber.

Pellets are emptied from a sack into an 11kg hopper at the top of the stove. The hopper automatically feeds the pellets into the stove as required. As the pellets burn a fan blows the hot air into the room. The heat output of the stove can be varied between 2kW and 5kW, allowing the stove to produce a low level of heat when required.

On a low setting, a hopper full of pellets will last several days before it needs to be refilled. There is very little ash produced, and it is stored in the stove's ash pan, which only needs to be emptied about once a month. When wood is burnt only 1% of it remains as ash, and this can be used as fertiliser.

These stoves need a flue to the outside, but not a chimney, so can be installed on most external walls.

Installation and costs

The stove was installed and supplied by 3G Energi of Kelso, just over the Scottish border from Kielder. Average costs (2007) for a pellet-burning stove are approximately £2,500 for the boiler, hearth and flue and £1,500 for installation. Running costs vary widely and depend on usage, but on average, compared to electricity, this stove will save £165 per year, as well as adding a focal point to any room.

Environmental impact

A pellet stove of this size, will, on average save 2,200kgs of CO_2 per year compared to heating with electric heaters.

Further information

Visit the other renewable energy sites shown on the map overleaf.

Kielder Castle renewable energy exhibition is open from Easter to October.

www.tynedalerenewableenergy.org.uk
www.3genergi.co.uk or 01573 229198