

Warmth from wood



Kielder is said to be the most remote village in England! Oil tankers make a long journey to deliver fuel and the village is within the largest man-made forest in Europe. It seemed sensible to try to use wood as fuel instead of oil, especially as burning wood is carbon neutral.

Kielder Regeneration worked with Tynedale Council and Kielder Community Enterprise Ltd (KCEL) to get a wood heating scheme installed for part of the village. The Council took on the fund-raising and commissioned a local architect to design the boiler house and special fuel store with a high doorway to accommodate wood chip deliveries. They then let the contract for construction of the boiler-house, the pipe-work and the installation of the wood fired boiler. Once it was fully operational the heating scheme was handed over to KCEL to run. The scheme provides heat for the Castle Visitor Centre, the school, the Youth Hostel, the Rivermead Workshops and six new homes built by Home Housing. Dry seasoned wood is chipped and made into fuel by the Forestry Commission at their depot nearby. It is delivered, depending on the heat demand, every one or two weeks, using a push-off trailer which discharges straight into the fuel store (a separate case study describes how this is done).

How does it work?

The system consists of a boiler house where hot water is produced from wood

chips, a fuel store, a feed auger between the two and a network of insulated pipes to distribute the heat. Each property has a heat exchanger in place of the boiler, this transfers heat from the district heating water into the heating and hot water system of the building.

A modern robust Austrian Kob wood boiler burns thumbnail sized wood chips. It is very efficient, produces no smoke, just occasional steam if the wood is damp, and very little ash. The whole system is fully automated although one of its caretakers goes in each day to see that all is well. Wood chip systems can be monitored and controlled by modem, but in Kielder it's a hands-on approach. Local people plant, tend and fell the trees and produce the chips, local people check out the boiler and local people use the heat!

Installation and costs

The capital cost of the whole installation was £600,000. The high cost was due to three things - the quality of the boiler-house building, the high quality boiler

and the length and difficulty in laying heat pipes over the river and through the trees to get to the Castle. The running costs of the system have been higher than expected due to teething problems with the pipe-work installation and the high electricity cost of pumping water around the pipes. Heat is sold to the users at a slightly cheaper cost than the equivalent in oil.

Environmental impact

The Kielder wood fired community heating saves, on average, 200 tonnes of CO₂ emissions per year, compared to heating with oil.

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

