

Pellet Boilers in Durham Schools

In 2001 Durham County Council started to phase out coal fired boilers from its schools. With three further schools due to be converted this year, all Durham County Schools using solid fuel heating should have been converted by 2005. At Ferryhill School, Trinity Special School and Staindrop Comprehensive the boilers were converted to wood pellets because they were off the mains gas network. The wood pellets are supplied by Premier, part of the Durham County Waste Management group and comply with the British BioGen code of practice.

Practical Impact

For the last 18 months the pellet boilers have worked without problems. The Pellets are less abrasive than coal and therefore there is less wear and tear. They also produce less ash and the pellets are easier to ignite and do not require "kindling" overnight. The caretakers are therefore happy because they have less work to do in the boilerhouse.

At Ferryhill School pellets the boiler has proved to be a good resource for teaching Science, Technology and Citizenship. The school is also able to host visits to see the boiler in action.



Terry, the caretaker, demonstrates the school's wood pellet boiler



Pupils showing the wood pellets that keep their school warm

The wood pellets are able to compete with the cost of solid fuel. The cost of the solid fuel (at 29GJ/tonne) varies between £50.85/tonne to £73.07/tonne excluding the Climate Change Levy (CCL) depending on the site (due to variations in the delivery costs) and the amount ordered at anyone time. The cost of wood fuel pellets (18GJ/tonne) varies from £58 to £73/tonne and is exempt from the CCL..

In the first year, schools receive a £10/tonne discount from local suppliers, Premier Waste, who are based at Coxhoe in County Durham. Premier Waste make their pellets from clean recycled wood, so that as well as producing a renewable energy they are also reducing the amount of waste that needs to be landfilled.

How much did the boiler conversion cost?

At Trinity Special School two Beeston Robin Hood Senior boilers rated at 195 kW and underfired by Riley Direkto three speed stokers were converted at a total cost of £3000. (Includes servicing, cleaning and addition of anti burnback devices to feed pipes.) At Ferryhill School a Hartley and Sudgen SCF200 coal boiler rated at 585 kW and underfired by a James Scott stoker was converted to wood pellet fuel.

Feedback from Durham County Council and the schools

The schools are pleased with the performance of the pellet boilers and glad to reduce their carbon dioxide emissions and waste. Owing to the success of the boilers Durham County Council is considering converting three more schools' solid fuel boilers to wood pellet fuel in 2003. It is also considering proposals to install new biomass boilers at two local schools, including Cassop Primary School. This school was the first in the country to have its own wind turbine, a 50kWh machine that was installed in 1999.



The wood pellet boilers provide plenty of opportunities to learn about the environment.

Technical Details

Trinity Special School

Converted Boiler: Beeston Robin Hood Senior 195 kW with Riley Direkto 3 speed stokers

Ferryhill School

Converted Boiler: Hartley and Sudgen SCF200 585 kW with James Scott stoker

Conversion work at all schools

Anti burnback devices: Addition of dowsing system and water reservoir

Fuel store: Profiling installed to assist the movement of pellets.

Servicing : Stokers overhauled and boiler houses cleaned

Installed by: CES/ELYO and Ian Chappell

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