

Biomass Boiler Plant Case Study



Kiwa Gastec was commissioned to test the efficiency of a £55m biomass boiler plant in the North of England, currently one of very few large scale wood-burning operations in the UK.

The plant is fuelled by waste wood from various sources - manufacturing offcuts, old pallets, wood recovered from demolition sites and collected at the local refuse tip which would otherwise contribute to landfill. Some 30 lorry loads per day supply the boiler, equating to about 120,000 tonnes per year.

The UK exports an estimated 8 million tonnes of wood annually, either for recycling or energy recovery, so redirecting at least some of this ensures there is no shortage of feedstock for the plant.

Our experts did a pre-test inspection of the premises to identify the best test methodology for the site, and to plan at which points in the plant to position the gas analyser. They then returned to perform the efficiency testing, to standard BS845. The testing involves recording not only the products of combustion, but also the rate of fuel consumption. This enabled us to calculate the overall heat loss of the plant. The collected data was analysed back at our offices in Cheltenham, and then presented in a report to the client, within a month of the test visit. It was good news for the plant owner, as the testing confirmed that its plant was running at over 85% thermal efficiency, meaning that it qualified for the Government's Enhanced Capital Allowance Scheme (ECA). This scheme allows businesses investing in certain energy-saving plant or machinery, such as biomass boilers, to write off the capital cost of their investment against their taxable profits.

Our team are used to travelling further afield than the North of England. Boilers imported into Britain are often tested at the place of manufacture, consequently we have performed efficiency testing across Europe and beyond. In addition to confirming thermal performance, we perform dust measurement tests (to standard BS13284) to check that the boiler can be operated in a smoke control zone.

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