

# CASE STUDY

# CLOTHIER LABS- BIOMASS AND MICRO-CHP

## BESPOKE DESIGN

Each installation is designed to meet specific client requirements with full computer simulation used to prove all designs.

## ENERGY EFFICIENCY

As approved Carbon Trust Consultants, we will ensure that the system energy performance is optimised to produce lower operational costs.

## PROJECT CDM AND MANAGEMENT

Our engineers and consultants will ensure that all aspects of the design and installation are fully compliant and all relevant permissions and safety requirements are fully adhered to.

## MCS ACCREDITED

ESP is an accredited installer, approved under the Government's Micro-generation Certification Scheme.

## CARBON TRUST

ESP are approved Carbon Trust Energy and Biomass Consultants.



- Full design, install and commission
- New wet distribution system serving high voltage test area via air handling units with close control
- Walking floor hook bins
- Designed for chip or pellet
- Web based control with SMS text alerts
- Micro-CHP complements biomass installation



Clothier Laboratory is a high voltage test facility owned by the New and Renewable Energy Centre (NaREC). The high voltage testing lab has been serving the electrical transmission and distribution industry for almost 40 years, offering bushing and string insulator testing for clients worldwide.



Previously, the facility was heated by a gas boiler that was installed at the time of construction c.1970. The decision was taken to replace this old, inefficient plant with a low carbon system that would deliver a reduction in annual energy expenditure and carbon emissions.



A 500kW Binder biomass boiler was selected as the primary heat source, with heat distributed via a series of air handling units which disperse the heat directly to the high voltage test equipment using jet diffusers. A close control system was installed to ensure optimal performance and to protect the test equipment from under or over-heating.



The Binder boiler was installed in a refurbished plant room with 10,000 litres of thermal storage, and a user-friendly display panel was fitted to improve monitoring of system performance. Fuel is stored in two walking floor hook bins which are located adjacent to the plant room, with fuel delivered to the boiler via a screw auger.



In addition to the 500kW biomass boiler, two 10kWe Yanmar micro-CHP units were installed. Although Yanmar's micro-CHP systems have only recently been introduced to the UK market, their reliability and performance has been well proven in Japan, where thousands of installations have been completed.



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