

CASE STUDY

MIDDLETON IN TEESDALE—BIOMASS / CHP DISTRICT HEATING SCHEME.

BESPOKE DESIGN

ESP projects are 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.



- New community energy centre
- Designed to supply 100 houses, a school and a community centre.
- Biomass boilers and dual circuit mains
- Off grid to replace existing coal and bottled gas.
- Combined heat and power unit to meet pumping load.



The town of Middleton in Teesdale is an off gas community; that has historically relied on coal for its heat. ESP undertook the design of a district heating system that will provide heat via a network of below ground mains.

A new energy centre located on the edge of the estate was designed to house a biomass boiler operating on local wood chip, as well as incorporating a combined heat and power unit (CHP). The two technologies worked together to meet the thermal loads of the buildings with the CHP unit also meeting the electrical load imposed by the circulating pumps.

The use of pre insulated mains with very low heat loss improves viability and enables water at 90 Deg C to be circulated to each building. With the exception of the school the design incorporates heat interface units in each building which hydraulically isolate the district system from the heating and hot water systems in the building.

The design incorporates bio-diesel fuel storage for the CHP and below ground biomass storage for the wood chip., enabling a minimum of 3 weeks fuel storage at full load capacity.

The Governments Renewable Heat Incentive is payable for every kW of biomass heat produced and the scheme is forecast to deliver over 2,000,000 kW per year which can provide valuable income on which capital can be secured.