

# CASE STUDY

## HMNB NAVAL BASE CLYDE – 800KW BIOMASS BOILER & NEW PRESSURISATION UNIT

### 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

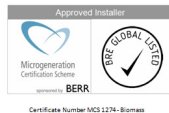
ESP are approved Carbon Trust Energy and Biomass Consultants.



- Full design, install, project management and commission
- 800kW woodchip boiler serving storage hangar via medium temperature hot water system
- 16,000 litres of thermal storage incorporated into system to improve operational efficiency
- Walking-floor hook bins
- Replacement of pressurisation unit to enable integration of biomass boiler into existing MTHW system



HM Naval Base Clyde, at Faslane, some 25 miles north west of Glasgow, is home to the United Kingdom's strategic nuclear deterrent and the headquarters of the Royal Navy in Scotland. In 2008, ESP was asked by Wood Energy, on behalf of Babcock Marine who are the main contractor at the base, to install a biomass boiler to serve one of the site's storage warehouses.



Previously, the facility was heated by two oil boilers. 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.



An 800kW Binder woodchip boiler was selected as the primary heat source, with heat distributed via an existing medium temperature hot water system to the storage hangar via a number of air handling units. Optimal performance is achieved via an advanced control system that allows remote monitoring via the internet and SMS text message.



The Binder boiler was installed in a refurbished plant room with 16,000 litres of thermal storage, with fuel stored in two walking floor hook bins which are located adjacent to the plant room. In addition to the biomass boiler installation, which was completed in 2009, the existing pressurisation unit was replaced to enable full integration of the new boiler and accumulator tanks into the medium temperature hot water distribution system.



ESP provided a complete design, project management and installation service, encompassing all elements of the project.



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