

Cardiff Bay: biomass boiler



Clean and bulky timber is collected, stockpiled, dried, chipped and fed into the new biomass boiler at Cardiff Harbour Authority



Waste wood is turned into a valuable source of energy for heating and hot water

Cardiff Harbour Authority has a range of statutory duties established by the Cardiff Bay Barrage Act 1993, and is operationally responsible for the management of the Barrage, Cardiff Bay and parts of the Taff and Ely Rivers which flow through the city into the bay. The Barrage created a 200 hectare freshwater lake and one of the Authority's important obligations is to maintain high environmental standards whilst also minimising the impacts of its activities.

During periods of high rainfall the Taff and Ely carry significant amounts of litter and debris and the Authority collects this waste from the surface and edges of the water. This is carried out using a specially equipped vessel which scoops up the debris with a mechanical arm. Approximately 1,000 tonnes of waste are recovered in this way each year, and wood comprises 70% of the total collected in the form of tree trunks, branches and twigs. Such material would have found its way onto the shorelines of the Severn Estuary prior to construction of the Barrage.

In accordance with its sustainability policy, and in order to reduce the amounts of waste going to landfill, the Authority now segregates all clean and bulky timber, and a state of the art 49Kw biomass boiler, costing £40,000, has been installed on the Barrage to turn the wood into a source for heating and hot water. Production of biomass energy is recognised as being carbon neutral since it does not increase emissions because the amount of carbon released equals that absorbed by plants as they grow.

Clean and bulky timber is stockpiled, dried, chipped and fed into the boiler. Over a two year period 94 tonnes of wood were salvaged and diverted from landfill, of which 48 tonnes were used as fuel. Surplus timber, unsuitable for the boiler, is converted into firewood to feed wood burning stoves.

Cardiff Harbour Authority also publishes a strategic action plan for its sustainability work which includes targets to measure energy consumption and waste on a monthly basis. A series of key performance indicators help monitor use of energy from both biomass and solar panels, as well as the planned decrease in the use of office consumables.