



**Doncaster Metropolitan Borough Council is committed to addressing the causes and consequences of climate change, reducing waste across the borough and making the best of the finite resources available. As a result, environmental sustainability is a priority in its *Sustainable Borough Strategy 2009-2025*.**

**Three woodfuel boilers provide heat and hot water for a leisure centre, 191 homes and a Community Environment Centre. Designed as a closed loop system, the project keeps the income generated circulating within the council.**

### objectives

- To reduce carbon emissions
- To cut the council's dependence on fossil fuel
- To create a use for the previously unwanted wood produced through the management of the council's woodland and urban trees

### actions

- Installed three woodfuel boilers:
  1. A 300kW KWB Powerfire biomass heating system to provide heat and hot water to a leisure centre
  2. A 500kW Froling Turbomat, to provide heat and hot water for a district heating system to 191 homes
  3. A 50kW Hertz Fibermatic biomass boiler to provide heat and hot water for the Woodland Community Environment Centre
- Organised production of woodfuel for the biomass boilers by the sustainable management of the council's woodland and urban trees

### achievements

- For the organisation:
  - A predicted reduction in carbon emissions for the district heating system - 350/450 tonnes per year, and for the leisure centre - 300/350 tonnes per year (and approximately £30,000 per year in fuel costs)
  - The project provides a disposal solution for 4,000 tonnes of wood "waste" per year, turning it into a useful resource and eliminating landfill costs of £68 per tonne – a saving of £272,000 a year
- For the region:
  - An exemplar of sustainable woodland management by a local authority has been created
  - Energy cost and carbon emission savings for 191 homes, a leisure centre and an education centre
  - Significant reduction in carbon emissions



## background

- The council's woodland management objectives are guaranteed as sustainable and all thinning and felling works are carried out in accordance with Forestry Commission felling licences
- The wood is all locally sourced and processed to produce a uniform chip size and moisture content to the standard of the Comité European Normalisation G30 and G50
- Woodfuel is also produced from wood that is a by-product of woodland and arboriculture management. This fuel is then supplied to the biomass boilers in council-owned buildings. The buildings are managed by organisations under the umbrella of the council, thus keeping the income produced circulating within the council

## quotes

*"Doncaster Council will have full control of the production and thus the quality of the fuel that is produced by the woodfuel project. The council will benefit directly from the year-on-year savings in CO<sub>2</sub> emissions and reduced fuel costs."*

Cllr Mark Thompson, Cabinet Member For Corporate Services, Environment and Sustainability, Waste Disposal and Recycling, Doncaster Metropolitan Borough Council

*"Doncaster Council has been managing its woodlands sustainably for more than 20 years. Biomass has created an outlet for arisings the council would otherwise have struggled to find an outlet for. The Doncaster biomass project is key to showing other woodland owners across the region what can be achieved – it brings improvements to woodland biodiversity, carbon savings and job security."*

Rudie Humphrey, Woodfuel Coordinator, Forestry Commission

## partners & funding

- The council has received advice and support from many organisations, including the Forestry Commission, South Yorkshire Forest Partnership, Wood Fuel East, Yorwoods, CO<sub>2</sub>Sense, and Silvapower
- Project costs have been minimised by adapting and incorporating the existing work of arboriculture and woodland operations
- An infrastructure grant from the Department of Energy and Climate Change (DECC) provided 100% funding to purchase a wood chipper and delivery trailer. In addition, a DECC capital grant paid 36% of the installation and purchase costs for two biomass boilers. The balance came from the council's capital programme

## lessons learnt

- Forward planning for feedstock and a plan for emergency stocks are both required
- When designing access to the refuelling hopper, the size and type of vehicle that will deliver the woodchip need to be taken into account
- The metal hopper that was supplied to the council needed additional ventilation to reduce condensation. A circular fuel feed system installed in the square hopper causes chip to pile up in the corners of the hopper: the chip has to be physically pushed into the central area before it is carried into the fuel feed

