

Macphie of Glenbervie Biomass Case Study



- Ian Cowe
- Biomass Development Officer
- Forestry Commission Scotland
- Aberdeenshire Council
- Scottish Enterprise

- The UK's leading independent food ingredients manufacturer based in the north-east of Scotland
- C. 300 employees between two sites, Glenbervie & Tannochside, near Glasgow
- Turnover in 2008 - £40 million



- Macphie has a strong sense of Corporate Social Responsibility
- “Green” values are woven into the fabric of Macphie
- 30,000 trees are planted on the estate each year
- HQ is located on the Macphie Estate, which has been planted over the last 700 years



Glenbervie
the last 700

- Three fold increase in energy demands over the last 30 years exceeds the local grid capacity
- In 2000 Macphie invested in a state of the art effluent water treatment plant
 - Sludge is used as fertiliser on the estate
- Feasibility Study of Biomass, Wind and Hydro
- Wood fuelled Boiler installed in 2008



Biomass Boiler Specification

Rated capacity	1.2MW
Guaranteed steam output	1500kg/hr @ 10bar
Fuel	Wood chips
Max moisture content	60% wet basis
Annual mass of fuel used	Approx. 5000 tonnes
Fuel silo extraction method	Moving floor
Boiler manufacturer	BIB Cochran Ltd
Furnace manufacturer	KARA Energy Systems Ltd
Build period	6 months



- The steam is fed directly into the UHT factory, which produces sweet and savoury sauces, desserts, fruit coulis and dairy cream alternatives
- Favourable economic payback period
- Reduction in the company's CO₂ emissions of



- Woodfuel has a lower unit cost than its alternatives
- Woodfuel is a renewable fuel
 - Lower atmospheric pollutants
 - Carbon
 - Sulphur dioxide
- Woodfuel has a stable price
- Woodfuel boilers are as efficient as fossil fuel alternatives
- Woodfuel benefits rural economy and

- Ian Cowe-Forestry Commission Stand C16
- Use Wood Fuel - usewoodfuel.co.uk
- Biomass Energy Centre - biomassenergycentre.org.uk
- Forestry Commission - forestry.gov.uk
- Forest Research - forestresearch.gov.uk
- Macphie of Glenbervie - macphie.com