

FORESTRY WASTE FUELS COUNCIL OFFICES IN BARNSELEY

Report from a colleague involved with the Sustainable Development Commission, 07/11/07

Last week I attended a seminar on wood pellet heating that was conducted by the Finnish Embassy. Amidst the Finnish sales people there was, Dick Bradford, Principal Designer and Energy Engineer from Barnsley. Remember that Barnsley is, traditionally, a coal town so you would expect municipal heating to be coal fired and, indeed, it was until Dick launched his wood burning policy.

Many of the council buildings have already been converted to burning wet wood waste, rather than dried, imported wood pellets. This is derived solely from arboreal waste, that is wood chips are made from the day-to-day pruning and management of trees that are in Barnsley's parks or on their roadsides - plus they take the waste from local tree surgeons and gardening companies. This does not include any recycled wood, its all green waste, so they use boilers that are designed for green wood. We asked whether they had and used extensive local forested land in order to provide enough fuel. No said Dick, not yet but we are going to manage the local forested land, too, and that will provide us with at least three times as much fuel as the council can use. Their aim is to encourage Barnsley businesses and homes to use the product.

New schools are built to use this method of heating and existing ones are being, or have been, converted to burning dry wood pellets. This significant observation from the Finnish pellet suppliers was that their product, too, is derived from waste; in their case from sawdust and other waste from the forestry industries in Finland, Sweden, Russia, Poland etc. They point out that these industries are sustainable and that they are, so far, not using wood grown as fuel but are taking up a waste stream and using this as fuel.

Unfortunately for Barnsley, the benchmark year on which future carbon emissions are based was 1990. Unfortunately because they had already reduced by 20%, starting in 1986. But they have made continuing reductions and reached their 2010 target of a further 20% reduction in 2001 and their 2020 target of 40% reductions in 2005. They aim to achieve 60% reductions, the 2050 target by 2010!

However, it gets even better when one looks at their energy costs. Wood pellets cost around £31 per Mw hour, electricity is £80, coal £47 and gas, £40. Barnsley, using its in-house produced BMBC chip product (Barnsley Metropolitan Borough Council) rates its costs at 20p per Mw hour.

Against this is the cost of boilers. One of their major projects has been the heating of their new Civic Centre and the development of this into a district heating system for other, nearby, council buildings. A gas boiler would have cost £18,000 but a green wood one worked out at £150,000. As Dick observed, a complete no-brainer, until he costed the two over 25 years, including fuel and maintenance. The wood boiler worked out at £450,000 and the gas equivalent at £1,208,000. As he said, a complete no-brainer to go for the cheaper boiler.

Housing has been converted, too. Dick showed us what was done on a group of three seven story blocks of flats. Before conversion, coal fired heating and a flat £10 per week heating charge. There was, he said, no way to get energy savings, "I've paid for bloody heating, so I'll use it" was the common response. When they made the change to wood they included individual flat smart card metering with top up at the local post office or even the local pub. Average heating costs have reduced to under £5 per week.

Barnsley have done little, it would seem, to promote their amazing reductions; there is some information on their website at: <http://tinyurl.com/3dxcgt>

I'm hoping to make a trip to meet Dick for a guided tour, in the not too distant future, and will produce a video record of that visit. Woking gets all the press coverage but it would appear that Barnsley have left them far behind. Something about a North/South divide, perhaps, or just Barnsley hiding their light under a bushel? I hope that we can redress the balance!

So biomass is not an environmental disaster when it utilises a waste stream and there must be many local authorities with a similar opportunity. There is scope also for importing wood pellets, though the fuel costs are higher, for with wood pellets from waste wood we were told that the energy gain, including transport, is around 75%. Longer term there is some potential for short rotation coppicing (SRC) or miscanthus growth. Biomass can be grown sustainably, particularly when growth is local to use, where existing agricultural land is not taken over and where the grown product is used directly to produce heat. That is, it is not processed into ethanol or other biofuel with the wasted energy that these processes involve. With local growth and use, the ash can be returned to the growing area.

Oh, I forgot to mention, the boilers that we were told about need to have their ash removed every 2 - 3 weeks.

[Notes 1/. There is a lot of forestry waste in Shropshire, Herefordshire & Powys.
2/. wood ash is a good fertiliser. AS]