

Anglia Woodfuels

Developing a sustainable woodfuel resource.

The Woodfuel Strategy for England, published by the Forestry Commission in March 2007, announced a national target; bringing an additional two million tonnes of wood to market annually. The East of England's regional target is to bring an additional 110,000 green tonnes of biomass to market by 2013. Luckily, there is already an organisation that should be in a position to supply nearly half of this amount by 2013. On a bright December day, Forestry Journal visited the Kelling Estate on the North Norfolk coast to see this group in action.

Founded by the late Dr Robert Rippengal of Econergy Ltd, Suffolk County Council's Woodland Advisor Gary Battell, and Clarke Willis of Anglia Farmers (the United Kingdom's largest agricultural buying group), Anglia Woodfuels (AWF) is a woodfuel supply co-operative. It covers Norfolk, Suffolk, Hertfordshire, Cambridgeshire, Bedfordshire and Essex. The company was established in April 2006 with the aid of a grant totalling £112,000, under the Bioenergy Infrastructure Grant Scheme. Their aim is to bring 50,000 hectares of undermanaged woodland, found mainly on farmland, back into production, and to promote a far

greater use of wood for fuel through the development of a supply chain throughout the Anglia region.

A board of directors, comprised of nine private landowners that also includes the National Trust, oversees the delivery of Defra's grant targets using AWF's mission statement, "To develop a woodfuel supply chain throughout the eastern region through a membership scheme that offers a woodfuel chipping service, technical advice and support through site visits, newsletters, a website and events." The strategy for achieving this is, "To develop a diverse customer base. In the short and medium term, the main market will be for woodfuel for use in boilers located both on the members' own premises and on third party sites."

Gary Battell says, "The first stage was to make regional producers, developers, planners and local authorities aware of the advantages and opportunities provided by woodfuel. Anglia's woodlands have been neglected for a long time and there was a lack of confidence in who to go to. In order to bring their woods back into management and to make sure that they are producing the right chip, appropriate to the boiler they have installed, we had to make sure that people were



Nick Deterding and Gary Battell in the receiving pit, a converted dryer barn. The central 6.4-metre sweep collector 'sweeps' clifs of woodchip into a central auger which feeds (rotates) the chip through the back wall straight into the 550kW Gilles boiler. The barn is filled once a month during the winter.

fully supported."

The support has been invaluable to founding member and board director Nick Deterding, who took over the running of the family-owned 1800-acre Kelling Estate in 1996. "Our main estate income was agriculture. We have 400 acres of woodland, some ancient, and a few stands of softwood. There has been no real management for years for fear of disturbing the pheasants that bring in an income (during the shooting season). The very real problem I face is that every operation in the woods costs money, and there is very little timber of any value that can offset this cost."

In 2002, in order to generate additional 'property' income, Nick converted a group of farm buildings at the far end of the Kelling Estate into 'The Lowes', a complex of 11 rentable second homes with an indoor swimming pool. With oil prices set to rise on the back of rumours of an imminent invasion in the Middle East, Nick regarded woodfuel as an environmentally friendly way of reducing his costs. This gave the estate the advantage of being able to market the complex as sustainable.

In 2004, Nick installed a 100kW KWB woodchip boiler using 60 to 80 tonnes of chip *per annum*. "At the time, woodheat was a voodoo science. We did not really understand what we were getting into. So we also put in an oil-fired backup boiler, which has subsequently proved to be problematic. It overrides the wood boiler when the demand for hot water comes through the system."

Two years ago, buildings around the Kelling Estate's farmyard were converted into additional offices

and workshops, including a Pilates studio, a gallery and a tearoom. Nick also invested in the sustainable farming of 12 tanks of tilapia fish, a low-fat bass substitute, which, as a native of North Africa, need a constant warm water temperature of 28°C.

'Energy Innovations', one of three regional boiler installers who have provided advice to would-be woodfuel converts, suggested installing a district heating system powered by a 550kW Gilles boiler which is operated remotely by computer in an emergency. Making use of existing on-site resources and minimising the fuel-handling requirement, the boiler was installed in a converted dryer barn. Using a central 6.4-metre sweep collector, the barn is filled once a month during the winter months. The project cost £120,000 (including the boiler, 700 metres of pipework, the dryer barn conversion and a newly-finished purpose-built chip-store) part-funded through a Bio-Energy Capital Grant scheme (Defra), applied for by Energy Innovations.

The Gilles 550kw boiler will be fed by 350 tonnes of woodchip a year, chipped by contractor Bill Hannant of King Timber, using AWF's Heizohack HM 10-400-K woodchipper which can produce 80 tonnes of chip on a good day. The chipper was the single largest capital outlay made by the group. It is fed by a Ford 8870 tractor, bought by King Timber specifically for this contract. Bill says, "King Timber contract for the Tilhill BSW group as well as working on three or four private estates. AWF offers woodland owners the chance to do something with their low grade timber, and it has enabled King Timber



Bill Hannant of King Timber, standing by his Ford 8870 tractor bought specifically to service the contract with Anglia Woodfuels.

to diversify into chipping."

Bill has spent the last two days at the Kelling Estate, turning 15-inch diameter, 4-metre lengths of poplar, Silver birch and chestnut into chips, sized 25 by 30 millimetres with a moisture content of 20 to 25%. They flow straight from the chipper into a newly-finished, purpose-built chip-store, which uses artic lorry sliding-sides to keep the chip aired but not exposed.

Nick continues, "Until AWF, there was no supply chain and no fuel. Before we had our own facility we were buying chip in. As we ran out, we rang round as far as Wales to see if suppliers had chip fit for the boiler. They didn't. With the first boiler we chipped into a dumper trailer and stopped chipping as we tipped the trailer into the store, using a JCB to pile it. The whole process was very slow and expensive."

"I am trying to keep the cost of the chipping under £10 per tonne. I would like Bill to come once a year (for five days) to fill up the store, so that I can concentrate on accumulating wood over the rest of the year. We hope to take 470 tonnes of timber from our woods, which is theoretically sustainable. As we actively manage our woodlands, we should start producing more and better timber. I can sell heat to my tenants at 10% under the price of oil, making heating cheaper for them and allowing the estate to make a small margin."

Forestry agent Andrew Falcon manages the Kelling Estate woodlands. He is one of five independent forestry agents brought together under AWF's banner. Agents will give a free day's advice on EWGS Woodland Creation for Woodfuel Crops. Through Andrew, the estate has received a Forestry Commission grant to plant a field of trial crops of future woodfuel; 40% eucalyptus, 40% birch and 20% sessile oak. The aim is to see if eucalyptus will coppice better than birch, and to eventually be left with native oak woodland.

Agents offer a felling licence application support, planning of sustainable cutting yields and rotations and the supervision of felling and extraction in preparation for chipping. AWF offer on-line guidelines on the best conditions to store, stack and season wood, and a representative will perform free moisture tests once a members' timber has been chipped.

Eighteen months on, Anglia Woodfuels has met most of its Defra targets early, including the setting up of management structures and

systems, the sourcing of equipment for group use, storage targets, member recruitment targets, and have increased the tonnes of seasoned woodfuel being produced at 35% moisture content in the region. The group has no permanent staff. What they have achieved is down to a group of dedicated volunteers like Anglia Farmers, who provide the administration services, and Gary Battell.

AWF has 41 'Full' or 'Associate' fee-paying members, including two local authorities and 28 woodland owners. Fourteen members are considering, or have had, woodfuel boilers installed. All members have access to the woodfuel chipping service, technical advice and support through site visits, newsletters and events. Their website receives 2500 hits a month. The group is hosting increasing numbers of visits, to see woodfuel production or boiler installations, by visitors from outside Anglia Woodfuels' catchment area, keen for best practice advice.

Gary says, "It is our experience that most people will not join at the promotion stage. People expect a free service early on, advice on storage and handling of wood. Twelve months before they install boilers, they start to stack and store their wood. They will join when they want the chipping service." Perhaps the best indicator of the groups' success is the number of chipping days booked by members. In 2006, Bill Hannant chipped for 15 days. This year it was 30, and double the amount again has already been booked for next year.

Gary thinks that AWF are already helping to fulfil the Eastern region's Forestry Commission targets. By 2013, he thinks AWF has the potential to have grown from a member organisation into a supplier group, supplying larger biofuel contracts such as the CHP plant going into the University of East Anglia, and local authority and developer-driven community heating schemes currently under consideration.

"My biggest concern is that, although there is support from the government through biomass and woodfuel strategies, grant applications are beholden to a yearly ten-week window of opportunity. If a developer is thinking of installing a community heating system, he is not going to wait a year to apply for a grant. The number of boilers installed should set the targets for woodchip. We will only truly create a market for business if we have the incentive of boiler installation grants in place all year



Bill Hannant of King Timber, using AWF's Heizohack HM 10-400-K woodchipper. He is turning 15-inch diameter, 4-metre lengths of poplar, Silver birch and chestnut into chips, sized 25 by 30 mm, with a moisture content of 20 to 25%. They flow straight from the chipper into a newly-finished, purpose-built chip-store, which uses artic lorry sliding-sides to keep the chip aired but not exposed.

round, simplified application forms and enough money on the table to support them."

Nick Deterding, the great grandson of Sir Henri Deterding, founder of Royal Dutch Shell has the last word. "My great grandfather was one of the shapers of the first world economies. Without oil, many of the achievements of the twentieth century would not have happened. However, we have been very profligate in our use of oil and we were unaware of the side effects. Now we all have to do our bit. Turning

the light off when leaving a room or turning the thermostat down by half a degree is as important as trying to promote woodfuel as an energy alternative. I am concerned about my children's and my grandchildren's future. That is my motivation for embracing this new technology."

Carolyne Locher

Next free event: 7 February: *Future of Wood Fuels*

For more information see: www.angliawoodfuels.co.uk or call 01603 730050.



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