

## Woodfuel!

As England's most wooded region, the south east has the greatest potential and most to gain from the booming interest in wood as a renewable fuel. Many people need no convincing about the merits of woodfuel but the early 2006 rise in energy prices and the growing awareness of climate change has created a surge of new interest and, more importantly, action.

The south east has over 270,000 ha of woodland, and has the potential to grow at more than 1 million cubic metres per year! Many of these woods are of native species and provide some of the richest wildlife habitats in the country. These ancient woods survived because they provided building material, tools and fuel for people and many plants and animals thrived in the diverse habitats created by the intensive management over hundreds of years. However, the loss of traditional markets for woodland products has resulted in the decline of the economic and ecological value of our woods.



Woodfuel (photo: FC picture library)

Woodfuel is now a real opportunity so do consider the following:

1. Think of your local opportunities - what is your heating bill?
2. Visit someone who is using wood already.
3. Remember that wood comes in a variety of fuel qualities suited to different situations.
4. Help raise wider awareness of wood - if you can find a good home for a 'Wood for Energy' poster (highlighted on page 2), let us know by emailing

[fc.seeng.cons@forestry.gsi.gov.uk](mailto:fc.seeng.cons@forestry.gsi.gov.uk)

Matthew Woodcock, Forestry Commission



Woodfuel Boilers (photo: FC picture library)

## Editorial

This issue of South East Woodland News focuses strongly on woodfuel and our lead article has already set the scene of the great potential there is to develop woodfuel here. Looking at the practical implications of this, the 'How to' article overleaf explains what you need to consider if you are thinking of supplying woodfuel. 'Ask the expert' also gives you tips on what type of woodfuel is appropriate in different situations.

Woodland management can play a part in ensuring there is the structural diversity in woodland for a diverse range of woodland flora and fauna. The growing woodfuel market should encourage uptake of management in currently neglected woodlands. We also feature a project in the High Weald working directly with landowners to restore plantations on ancient woodland sites.

Please forward South East Woodland News to people who you think would find it interesting. You can also find all back issues of South East Woodland News at [www.forestry.gov.uk/sewn](http://www.forestry.gov.uk/sewn) South East Woodland News covers issues in a relatively timeless manner, so most information remains helpful well beyond the initial publication date.

Thanks to all the contributors to this issue: Matthew Woodcock, Nick Sandford, Charlotte Bruton and Gill Alker and Julie Bolton.

Jane Hull, Editor

## How to... Link into the woodfuel supply chain - a brief checklist

**Know the Market** - Make an effort to see a woodchip boiler. Seeing is understanding, learn the chip standard size e.g. G30, G50 etc, moisture content 30, 40, 50 %

**Attend a Training Course** - South East Wood Fuels (SEWF) run successful training courses explaining the whole process of woodfuel and the requirements of the industry.

**Quality, Quality, Quality!** - Your customers must have a fuel that is as reliable as oil and gas. Woodchip is a high quality product that has to be up to standard load after load, not a heap suitable only for mulch.



Woodchips for Woodfuel (photo: FC Picture Library)

**Contract - Know What Your Customer Wants (Chip Size and Moisture Content)** - Get the contract agreed well in advance or join a marketing group such as SEWF.

**Seasoning** - This is best achieved by leaving the timber stacked on bearers in an airy, sunny part of the wood or a yard. Cut and stack to match your machinery.

**Keep it clean** - The chip must be free of contamination; no stones, nails, plastics, or timber with glue and other chemicals in it. Contaminants cause problems; pollution and chemical reaction can damage the boiler and flue.

**Storage and Delivery** - Resolve simple details at the planning stage, improve efficiency of delivery and reduce costs. The more time and, to a certain extent, money spent on fuel store design the greater the saving on fuel costs. The easiest delivery is to tip from a trailer straight into the store. Delivery by front-end loader, blowers, bags or specialist container all work, but add to fuel cost.

**Chipping** - The chipper has to be designed to produce fuel quality chip with a screen to keep the chip size consistent. Big chunks and long slivers block augers.

Nick Sandford South East Biomass Champion  
[ghpt@godinton.fsnet.co.uk](mailto:ghpt@godinton.fsnet.co.uk)  
South East Wood Fuels 0845 869 3775  
[info@sewf.co.uk](mailto:info@sewf.co.uk)

## The Wood for Energy Poster!

Schools across the South East can now demonstrate to their pupils the sustainability of using woodfuel. The Wood for Energy poster has been designed to illustrate the wide range of benefits that using wood as a fuel can bring- <http://www.forestry.gov.uk/forestry/infd-6rpkwg>

Copies of the poster are available for collection from FC offices at Alice Holt, Bedgebury and Wendover.

**Directions to our offices.**



Wood for Energy Poster

## West Sussex helps you find logs!

West Sussex County Council have developed a Log List to help the people find logs. The market for logs is good at present with increasing numbers of people putting in log burning stoves.

The Log List is available as a leaflet or online - [www.westsussex.gov.uk](http://www.westsussex.gov.uk) and type 'Log list' into the search facility. They've been distributed across the county to libraries, district council offices and country parks. The suppliers of logs and stoves also take the list with them to shows themselves or just distribute during their day to day work.

The Log List highlights suppliers by area, and also includes a handy section on questions to ask your log supplier. This will help people clarify what they want and what is being supplied - ensuring good customer relationships.

Julie Bolton, West Sussex County Council

## Taking the long view - Charcoal burning.....

Charcoal is one of the most commonly used forms of woodfuel. It produces twice the heat of wood. Whilst we mainly know it for barbeques, it has many industrial uses. Charcoal has been produced in the UK for 5,000 years, since metals were first smelted. The Romans used furnace slag as road hardcore. In 1282, there were 900 charcoal burners in the Forest of Dean. Most is now imported but a few charcoal burners remain.

Charcoal is made by a slow burn with limited air supply in a charcoal kiln, ensuring insufficient air for complete combustion. Generally the denser the timber, the better charcoal quality. 6-8 tonnes of wood makes 1 tonne of charcoal.



Charcoal Burning (Photo: Forest Life Picture Library)

Burn preparation involves ensuring the kiln air vents and the chimney are clear. The vents are bedded in to ensure an airtight seal. A base of fines is laid in the centre, with larger diameter logs to regulate air flow. Logs (2 - 8 inches diameter) are laid, ensuring a central chimney is kept clear. Charcoal is lit and loaded to start the burn. The lid is closed and sealed with earth. Initially white smoke is seen. When it becomes thin blue smoke water has been driven off and the charcoal is burning. The kiln is made air tight by fully closing off air intakes with more earth. A burn should take about 20 hours. For more details see

[http://www.weyriver.co.uk/theriver/industry\\_6\\_charcoal.htm](http://www.weyriver.co.uk/theriver/industry_6_charcoal.htm) and <http://www.stewardwood.org/resources/DIYcharcoal.htm>

*Ian Baldwin, Sylvan Charcoal*

## Success story - High Weald Plantations on Ancient Woodland Site (PAWS) Restoration Project

If you own a Plantation on Ancient Woodland Site (PAWS) you will be interested to read about the early achievements of this project to restore PAWS to native broadleaved woodland. The annual report explains how landowners were contacted and supported to restart woodland management through advisory visits, clear and inspiring information on woodland history and management, and demonstration workshops. This project has particular relevance to those involved in PAWS restoration around the region. It can be downloaded from

<http://www.highweald.org/text.asp?PageId=224>

## Ask the Expert... In which situations can I use logs, chips and pellets for woodfuel?



Wood can be used as a fuel in three main forms - logs, pellets and chips. Each has pros and cons which make them suitable for different applications, whether in an urban or rural context, based on the amount of manual handling the user is prepared to contribute.

**Logs** are the simplest form of wood fuel. Logs will normally be used in a domestic context in an open fire or more efficiently in a log burning stove, with or without an integrated boiler. An alternative is to use logs in a highly efficient automated biomass boiler to provide for space heating and hot water. Log boilers tend to be cheaper than chip and pellet boilers, however they do need to be loaded on a daily or sometimes twice daily basis. Due to the higher level of handling involved, this form of heating is better suited to farms and rural areas, particularly where the end users may in some way be involved in the production of the raw material.

The benefit of **woodchip** is that it involves greatly reduced manual handling compared to logs. Woodchip is most commonly delivered by a tipping vehicle directly into a container or via a chip blower. Chip blowers integrated into the delivery vehicle are becoming more common. Woodchips do require a reasonably large storage area and the cost of boilers is usually more than that of log or pellet boilers although the cost of chips is significantly less than pellets. They are most suited to rural locations or suburban areas where there is space for the fuel store and a reasonable amount of access.

The production of **pellets** requires significant processing in order to drive off moisture and to create a dust which then must be compressed to form the pellets. This additional processing ensures that the fuel is extremely consistent in size and moisture, allowing them to flow freely and allowing less robust handling mechanisms to be used. Although more expensive than logs or chip, the major benefit of pellets is the higher energy density compared to both. This means that for the same amount of energy, a third to a half of the volume is required when using pellets. Pellets are therefore suited to locations where limited manual handling is desired and where space is very limited. Pellets can be delivered by tipping vehicle but are more commonly delivered by a blower vehicle therefore vehicle access to the store is not essential.

*Charlotte Bruton and Gill Alker*

TV Energy - [www.tvenergy.org](http://www.tvenergy.org)

## Good reading and resources on Woodfuel

Most recent resources are available electronically on the internet. An important site to keep an eye on is <http://www.biomassenergycentre.org.uk> This is run by the Forestry Commission as a central point for all information on woodfuel. It includes technical information, publications and information on grants and suppliers.

A good clear starting point can be found in the **Woodfuel Information Pack**. This is available from Forestry Commission Publications, PO Box 25, Wetherby, West Yorkshire, LS23 7EW. 0870 121 4180 or [forestry@twoten.press.net](mailto:forestry@twoten.press.net)

Another introductory leaflet is "Woodfuel meets the challenge". This can be downloaded from the publications page on the Biomass Energy Centre (see link above).

Hall, A. (2005). Small-scale Systems for Harvesting Woodfuel Products. Forestry Commission Technical Note 009, Forestry Commission, Edinburgh. Download from <http://www.forestry.gov.uk/publications> This is a practical guide to effective harvesting systems when extracting wood from small woodlands.

TV Energy (2006) A South East Regional Study into Wood and Energy Crops as a Source of Bioenergy. A comprehensive overview of growing, funding and harvesting biomass alongside market assessment and case studies. Download from <http://www.tvenergy.org/publications.htm> (NB 4MB!).



## Useful Grants

**Woodfuel Grants** - There are a range of grants available to support woodfuel suppliers and installations. These range from national to regional grants and keep changing! The most up to date information is at:

<http://www.biomassenergycentre.org.uk>

### England Woodland Grant Scheme

All grants are open for business at present. See <http://www.forestry.gov.uk/ewgs>.

The Prospectus can be found at

<http://www.forestry.gov.uk/forestry/INFD-6PTEDU#southeastengland>

### *The Firewood poem (trad.)*

*Beechwood fires are bright and clear  
If the logs are kept a year,  
Chestnut's only good they say,  
If for logs 'tis laid away.  
Make a fire of Elder tree,  
Death within your house will be;  
But ash new or ash old,  
Is fit for a queen with crown of gold.*

*Birch and fir logs burn too fast  
Blaze up bright and do not last,  
It is by the Irish said  
Hawthorn bakes the sweetest bread.  
Elm wood burns like churchyard mould,  
E'en the very flames are cold  
But Ash green or Ash brown  
Is fit for a queen with golden crown.*

*Poplar gives a bitter smoke,  
Fills your eyes and makes you choke,  
Apple wood will scent your room  
Pear wood smells like flowers in bloom  
Oaken logs, if dry and old  
Keep away the winter's cold  
But Ash wet or Ash dry  
A king shall warm his slippers by.*

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