

Woodheat Solutions Press Release – Training Pack

The Forestry Commission and Thames Valley established the Woodheat Solutions project to transfer experience from Finland and Austria where the use of wood biomass for heating homes, schools and offices is well established. As part of this project, the project partners have created a training programme to deliver Best Practice information about biomass heating from Finland and Austria. The training pack is designed for use as a one-day course suitable for forestry and agricultural advisors, or as CDP material for architects, planners and M&E engineers.

An important new development for wood biomass in the UK is the launch of the **Renewable Heat Incentive**, which provides a major financial stimulus for businesses considering woodheat purchase or supply. The Woodheat Solutions Training Pack can equip professionals entering the biomass market with the necessary knowledge to take best advantage of this incentive. Some of the key lessons of the project have been:



1. There is a significant amount of woody biomass available in UK woodlands – in the order of 2 million m³ per year;
2. Wood biomass offers a highly carbon efficient source of heat – particularly when it is used locally;
3. Wood heat offers a major opportunity for many rural businesses across Europe;
4. The culture and principles of using wood heating efficiently need to be re-established in the UK;
5. Standards are essential to provide a common language between wood fuel suppliers and consumers;
6. Delivery of quality woodfuel requires us to build understanding and embed a culture of quality management;
7. The use of wood as a fuel source requires the forestry community to consider wood in terms of carbon and energy as well as volume and timber;

8. Ongoing technical and financial support and encouragement will help establish an efficient and effective Woodheat industry.

The Woodheat Solutions project partners have put together a lot of information which you can draw upon when considering your options as a potential user or supplier of woodheat, all available on the project website:

www.woodheatsolutions.eu .

We have brought all of this together as a training CD/pack which is also downloadable from the website or on a CD (let us know if you'd like us to send you a copy). The CD has copies of all the Woodheat Solutions lectures and reference material, as shown below:



It also contains case studies of wood biomass projects installed in Austria and Finland, guidance about wood fuel standards and example contracts showing how to set up your own project selling heat to wood heat customers.]

Perhaps the most valuable outcome of the project is a better understanding of what makes a good woodheat system, as this is crucial to both buyers and suppliers of woodheat. Here is a summary of issues which you need to consider if you're thinking of installing or supplying a woodheat system – further information and design guidance is available on the Woodheat Solutions Training Pack:

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Designing a woodheat system:

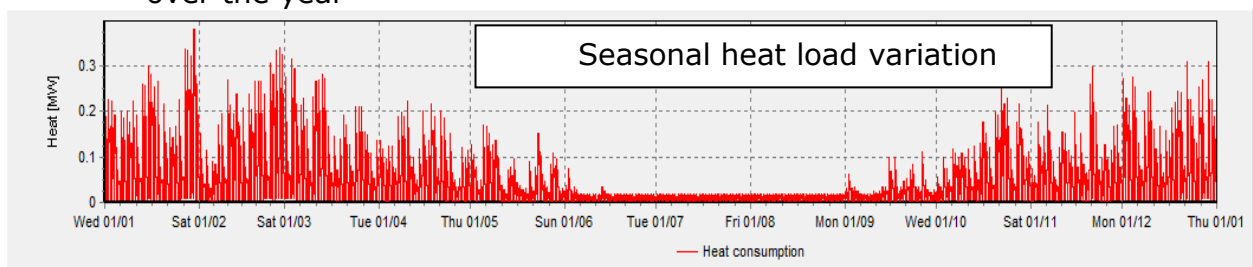
COMMON MISTAKES:

- **Oversizing the boiler:** as this is not efficient, and you will have higher maintenance and fuel costs as well as higher emissions;
- **Poorly sized, located or designed woodchip bunkers:** this increases the cost and time needed for fuel deliveries;
- **Jamming woodchip feed systems:** augers can be jammed by poor quality woodchips (containing 'slivers'); this causes increased maintenance costs and inconvenience.

GETTING IT RIGHT:

1. Identify the heat load and profile:

- Save energy by better insulation first!
- Assess the heat load – use a qualified assessor and check you recent fuel bills
- Consider when you need heat, both throughout the day and night and over the year



2. 'Smooth out' the heat load with an accumulator tank to allow your boiler to run efficiently – i.e. at optimal load



Domestic accumulator drawing heat from a wood burning stove and solar thermal array, with electric emersion coils for frost protection when owner is away in winter



'Large' accumulator working with a 250kW boiler to heat a former stately home (or 'schloss')

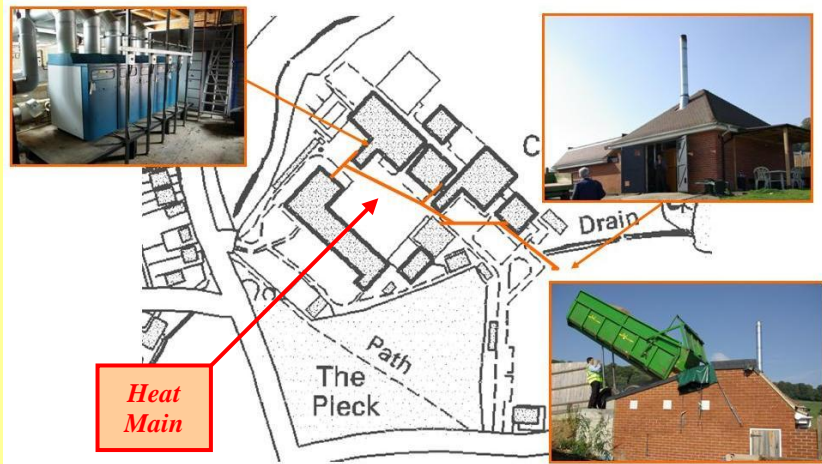
3. Are there other heat sources (solar, gas or oil) which can be included in the overall system to optimize efficiency of Woodheat?

Use these to provide for low summer heat needs and to 'top off' heat on cold winter days

Example:

Typical large secondary school: many gas and oil boilers heating different buildings.

- Install a heat main to link heat supply to all buildings;
- Bespoke woodheat 'plant' for the woodheat boiler and woodchip bunker for easy fuel delivery;
- Size woodheat boiler to run at optimal efficiency using accumulator and existing gas boilers to help with low summer and peak winter loads.



4. Consider the capacity of the woodfuelled boiler needed:

- Depends on 1, 2 and 3 above but generally about 70% of the equivalent oil or gas system (remember woodheat boilers work best at high load)

5. Consider which woodfuel type is best suited to your site and requirements:

- Logs work well in batch boilers but usually require manual loading;
- Chips suite large heat loads but need space; and
- Pellets are compact and convenient but fuel is more expensive.

6. Consider the size of the fuel 'bunker'

– especially when considering woodchips:

- Heat load:** Woodchips contain as little as 500kWh per loose cubic metre.
- A buffer of woodfuel is always required between deliveries**

- **Method of delivery:** Full loads via tipplers are cheap; woodchips blowers are expensive to use!
- **Avoid 'just in time' deliveries:** Bunker >1.5 X capacity of the delivery vehicle.
- **Usable capacity of a bunker:** Woodchips don't flow. Design to allow delivery into the centre
- **Ensure easy access**



7. Consider the location of the fuel 'bunker':

- **Boiler location:** easier to transport heat through a hot water pipe than woodchips
- **Landform:** Take advantage of the landform
- **Delivery method:** Flexible systems allow choice of woodfuel supplier – tip if possible.

8. Consider the woodfuel supply chain:

- Woodchip quality depends on the boiler specification or visa versa. Sophisticated boilers often need a high quality woodchips, if you can't supply seek a more flexible boiler.
- Critical elements are:
 - (a) **Moisture content:** Dry wood in a sunny and windy location without shade - this should reduce moisture from about 50% to 30% over a spring/summer season. A lower moisture content will require an extended period or forced drying.
 - (b) **Chip size distribution:** Use a high quality woodchipper designed for producing woodchip fuel; or use mechanical screens to 'refine' lower quality woodchips – as might be produced from arboricultural operations;
- Use a set of calibrated sieves as recommended in the CEN Standards to check that you are producing these to the agreed specification.
Note: Self supply can allow very simple supply chains but make sure you consider the whole system

9. **System maintenance:** Woodheat boilers usually require a small amount of maintenance e.g. removal of dust from sensors and removal of blockages from the feed system. The person who will carry out this work must be identified and 'enthused' about what s/he needs to do

FINALLY - Don't let grants tempt you to oversize the boiler – you'll regret it!