

4. RENEWABLE ENERGY

(See also Urban Fringe and Built Environment, Woodland Produce and Timber Production and Marketing, and Climate Change)

1. The UK Energy White Paper sets out the Government's policy for moving towards a low carbon future. The Government has committed itself to the Kyoto process and reducing carbon emissions and the impact they have on the global and UK environment.
2. The key mechanisms to achieve a reduction in carbon emissions are to reduce energy consumption through increased energy efficiency and moving to renewables. Biomass, which includes wood and short rotation coppice, is seen as the second most significant resource for the country behind wind.
3. In the White Paper, great importance is placed on the role of renewables in the production of electricity. At a regional/local level however one of the most efficient ways of using woodfuel is in the generation of heat, or combined heat and power, rather than electricity.
4. Indeed, the market for heating is actually larger than that for electricity in the UK, accounting for 45% of total energy use. Moreover, wood fuelled heating is probably the lowest cost of all renewables both in terms of capital and delivered energy costs.



A. Resource

5. The East of England Round Table for Sustainable Development produced regional targets for renewable energy, based on an assessment of the region's capacity to generate electricity from all potential renewable sources. Biomass was viewed as making a key contribution in the region. They estimated that if a 14% renewable energy target by 2010 was adopted, the region would have to produce 700 GWhr/yr from biomass. This would require 92,000 hectares of woodland, either existing or specially planted short rotation coppice. The East of England has about 140,000 hectares of existing woodland, although about 50,000 hectares are currently not managed to produce much, if any, timber. As discussed in the section on wood and timber production, there is a perceived need of a bulk market for low quality timber in the region. The development of a renewable energy market could provide that bulk outlet.
6. It is evident that there is a substantial resource available for energy generation. There are, however, a number of constraints to this being forthcoming:

- Price offered for wood,
- small woodland size,
- diverse ownership,
- alternative uses, particularly sporting and nature conservation,
- uneven distribution, and
- lack of skills and supply chain infrastructure to get fuel from wood to end user.

7. The production of woodfuel from some woodlands would enhance biodiversity and opportunities for shooting.
8. To improve its viability, and ensure carbon neutrality, wood for fuel should not be transported great distances, a common maximum distance quoted being 20 kilometres. It is also likely that production from very small woodlands could only be viable if supplying a very local user.

9. There is the potential for a considerable increase in the area of woodland, particularly short-rotation coppice specifically for energy generation, as a form of farm diversification. The establishment of coppice of this type will probably be dependent on the existence of a reliable market.
10. Co-products of the softwood saw-mills of the region are a further potential source of wood fuel which could also improve sawmill viability and hence log prices.

B. Infrastructure

11. The technology for burning wood to produce heat and power is well developed, tried and tested throughout Europe with examples in Britain. Much of the effort in Britain has been targeted at the development of large 'power stations', but these have only been moderately successful. There are however much more positive results from smaller scale installations, either wood fired boilers or combined heat and power plants (CHP). The consensus within the East of England appears to be in favour of the development of widespread small-scale operations rather than further power stations relying on wood fuel.
12. Wood is generally fed into burners as chips but, increasingly, small boilers tend to use wood pellets, as they are easier to store and feed into the burners. Currently wood chipping is widely undertaken in the East of England, primarily by arboriculturalists, but with an industrial scale operation at Thetford. The technology of wood chipping is also well advanced. The production of wood pellets uses a lot of energy and the energy balance is poor, unless use is made of waste heat from other processes or material that has already been dried. There are currently no pellet production facilities in the East of England.
13. If woodfuel is to be advanced as a significant source of renewable energy in the East of England, a well-developed supply-chain will be needed, something that does not currently exist. Wood will need to compete with fuels such as oil and natural gas in terms not just of price, but of ease of purchase, delivery and use.

What is being done for renewable energy?

Nationally DTI, Defra, and the New Opportunities Fund have developed a range of schemes to support investment in bio-energy including capital grants for the development of biomass energy plants, support for the supply chain infrastructure, community and household grants, and support for producer groups and growing energy crops.

Research has been commissioned to estimate the woodfuel resource available in Britain from woodlands, energy crops and arboricultural material.

'Renewables East' has been established which will promote business development and take-up of renewable energy.

The strategic report, 'Woodfuel in the East of England, Prospects and Potential' will be published in 2003.

There is an existing well-developed market for firewood in the East of England, although some of this is imported into the region from as far afield as West Yorkshire. It is estimated that over 60,000 tonnes are produced each year.

The Fibrowatt power station at Thetford burns the largest consumption of wood chip for power in the country but there may be opportunities to increase this.

A biofuel plant at Eye has received planning permission.

Opportunities for renewable energy.

- Promote the use of wood for heat and power generation.
- Continue to make the case for including heat production when considering use of renewable energy and setting targets for reduction in carbon emissions.
- Establish woodfuel heating and CHP demonstration installations around the region.
- Encourage the use of wood for heat in public buildings, schools, leisure centres, glasshouses, armed forces bases, prisons, rural estates and farms.
- Use the planning system to actively encourage the use of wood for heat and power generation in major new developments.
- Support the development of the contractor supply chain and infrastructure.
- Support the development of technical training packages for end users, specifiers and heating installation specialists.
- Mitigate the high initial cost of wood boiler plant through focussed grant support.
- Develop a dedicated resource to provide a clear and unbiased information, facilitation and networking service for woodfuel development in the region, (similar to the Advantage West Midlands funded 'Marches Wood Energy Network' in the West Midlands)
- Develop regional woodheating opportunity maps based on the woodland resource, natural gas grid and existing/planned wood heating facilities.

Initiative for Renewable Energy

RE1	Promote the use of wood for heat generation.
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To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).