



are easier to store and transport. Pellets are best suited to smaller boilers where storage space is at a premium and for switching fuels within an existing coal boiler to wood. Chips are more suited to new installations of larger boilers, where storage space is less limited.

5 The use of wood as a fuel potentially brings a number of benefits:

- It reduces to near zero the net carbon emissions from heating buildings, with those remaining associated with transport and manufacture of the chips/pellets.
- Other than short rotation coppice, which is grown for the purpose, the boilers potentially provide a market for waste products from the forestry and wood processing industries. This generates revenue for the business concerned, and also can take waste out of the waste stream, reducing both cost and landfill requirements.
- It provides insulation from the supply and price volatility of traditional energy supply markets (ie oil and gas)

6 Conversely, the costs of new woodheat boilers can exceed that of gas boilers, and the funding available through the PSA (and from other grant sources) was utilised to remove this differential. In addition, although wood chips are cheaper than gas, the costs of wood pellets until recently were higher. This differential has been removed with the recent increase in gas prices, such that the costs of the two fuels are now equivalent.

7 The other risks of woodheat have been that in the UK it is relatively new and untried technology, and more importantly that the supply chains for the fuel are still relatively undeveloped. Sources of both chips and pellets tend to be scattered, and fuel quality control is still poorly developed. It was partly to resolve these issues that the County Council in partnership with a number of other organisations established Renewable Nottinghamshire Utilities (ReNU) Ltd, a not for profit company set up to develop the woodfuel supply chain. The County Council is represented on the Board of RENU Ltd through Cllr John Stocks, Cabinet Member for Resources.

### Existing Installations

8 There are 5 schools that have been operating on woodheat, as follows:

School	Type of fuel	New boiler/ conversion	Annual CO <sub>2</sub> saving (tonnes)
Garibaldi secondary, Mansfield	Wood pellet	New boiler (2)	313
Dunham on Trent primary	Woodchip	New boiler	44
Ranskill primary	Wood pellet	New boiler	50
James Peacock primary, Ruddington	Wood pellet	Conversion	22
West Bridgford secondary	Wood pellet	Conversion (3)	779
<b>Total CO<sub>2</sub> savings per year</b>			<b>1,208</b>

### Current Installations

- 9 In addition the following 9 schools have or are being converted to wood pellets under the current programme:

School	Type of fuel	New boiler/ conversion	Annual CO <sub>2</sub> saving (tonnes)
Chilwell comprehensive school	Wood pellet	Conversion	501
Redhill comprehensive school	Wood pellet	Conversion	373
Harworth C of E primary	Wood pellet	Conversion	48
St Matthews C of E primary	Wood pellet	Conversion	37
Kneesall primary	Wood pellet	Conversion	37
St Wilfreds primary	Wood pellet	Conversion	18
Linby cum Papplewick primary	Wood pellet	New boiler	33
Mornington primary	Wood pellet	Conversion	53
Butler Hill primary	Wood pellet	Conversion	62
<b>Total CO<sub>2</sub> savings per year</b>			<b>1,162</b>

- 10 On completion of the current programme, a cumulative saving of 2,370 tonnes CO<sub>2</sub> per year will have been achieved. This together with other gas boilers installed under the PSA boiler replacement programme will mean that by March 2006 the Authority should have exceeded its PSA stretch target.
- 11 In addition to these completed installations, the Authority is also taking part in a best practice demonstration programme funded by the Department of Trade and Industry (DTI). Under this programme, one of the 5 large coal-fired boilers at Meden School and Technology College will be converted to operate on all types of woodfuel ie chips, pellets and SRC. The trial is due to commence in the early part of the forthcoming heating season. If successful, the conversion of this boiler should yield further savings of 180 tonnes CO<sub>2</sub> per annum, bringing the total for woodheat to just over 2,500 tonnes.

### **Operational Issues**

- 12 New Members of the Committee will not be aware of the operational difficulties which the project has had to overcome, although these have been extensively reported in the past. These fall into 3 categories:
- a) Choice of boilers in the early stages was limited, and one French-made boiler had to be rejected and removed following installation because it was not sufficiently reliable. Since then more boilers have come on the market (including those produced by at least 3 UK-based boiler manufacturers, one of which is located in Nottinghamshire) and the type of boiler reliability problems encountered previously are not expected in the future.
  - b) There have been significant problems in fuel quality, with some deliveries of both chips and pellets having to be rejected. There has been considerable effort over the past year throughout the industry, and by ReNU in particular, to resolve this through testing regimes. Europe is expected to introduce a comprehensive woodfuel certification scheme in the future, but in the interim efforts to ensure fuel quality locally will need to continue.

- c) Whereas local supplies of woodchips are abundant, it has been hard to secure local supplies of pellets. These have mostly been obtained from Wales, though some have been purchased from the international pellet market which sources mainly from Scandinavia and Canada. Although this is less desirable, in CO<sub>2</sub> terms the transport costs of bulk shipping by sea is relatively small, and burning overseas pellets still represents a more sustainable solution than fossil fuels. Nonetheless ReNU has procured a pellet mill which has recently been installed in Nottinghamshire, and this will provide a long term reliable source of local pellets.

### **Future Programme**

- 13 Once the PSA programme has been completed, and the benefits already gained are to be extended, a new programme for further adoption of woodheat in Nottinghamshire will need to be developed. This will continue to seek opportunities to convert existing coal boilers with significant residual life to burn wood pellets. However in the longer term it is hoped that the programme can switch the emphasis to new woodheat boilers when old boilers require replacement, and to install woodheat boilers when new buildings are constructed. This may require new sources of funding to meet the differential costs between a woodheat and a gas boiler, but future indications are that as gas prices continue to rise compared to wood, so woodheat will increasingly become the most cost effective as well as sustainable solution. This is particularly so where woodchip burning boilers can be “designed in” to new build projects. However, any new programme will be subject both to scrutiny by this Committee and a formal decision by Cabinet before being adopted.
- 14 Nottinghamshire County Council was one of the first UK local authorities to develop a woodheat programme, and this was recognised in the recent award of Beacon Council status to the Authority for Sustainable Energy. This award brings with it a responsibility to share experience with other local authorities, and officers will be working closely with a number of other Councils in the region and nationally to promote woodheat more widely.

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