Technical study –
Woodfuel supply and demand in Dorset

For Dorset Woodlink

2009

Completed by Crops for Energy and the Centre for Sustainable Energy

Dorset
AREA OF OUTSTANDING
NATURAL BEAUTY

EXECUTIVE SUMMARY

Dorset is a predominantly rural county with over 30,000 hectares of woodland (11% cover) and 200,000 hectares of farmland. Producing woodfuel from this land resource would enable Dorset to play its part in reducing greenhouse gas emissions responsible for climate change and also secure a degree of future fuel independence. In addition, embracing woodfuel production would lead to an increase in rural jobs and keep revenue in the local economy.

Many Dorset citizens could benefit from woodfuel as a cheaper fuel. There are 39,000 houses in Dorset, Bournemouth and Poole that are currently not serviced with mains gas. Many of these properties will be heated by more expensive fossil fuels such as oil or electric heating. As a result some of the more vulnerable households will be in fuel poverty (10% of their income is spent on heating their home).

Although many properties are currently using wood as a fuel in wood stoves to heat single rooms there are still only a few buildings that are getting all of their central heating from woodfuel. In fact, there are just 24 biomass boiler installations in the county at the present time. These are shared amongst the public, community, commercial and residential sectors and have a combined annual requirement for 1,500 tonnes of woodfuel (at 30% moisture content).

This report addresses the potential theoretical maximum supply of woodfuel from Dorset and matches this resource with potential future demand. The primary aim of the report is to provide producers with the confidence to invest in infrastructure to make woodfuel available on a local level and also to reassure consumers that once they have selected woodfuel as there heating medium that they will not have to worry about future fuel shortages.

A variety of sources of woodfuel were evaluated including woodland; arboricultural arisings; heathland arisings; sawmills and joineries; and energy crops. The estimated woodfuel resource available in Dorset is around 105,000 tonnes per year at 30% moisture content). 92% of this would probably come from existing woodlands. However, a degree of caution needs to be exercised with regards to this figure as the majority of woodlands in Dorset are small, under-managed woods and it is not currently economically viable to bring these back into a regular management regime. In addition, it is important to not over manage woodlands as this might adversely affect biodiversity. As a result, it might be practical to reduce this potential yield by 20% to allow for inaccessible locations and to some areas of woods to be retained for habitat management.

Potential uptake and future demand for woodfuel has been based on energy data obtained from local authorities and predictions based on current and future legislation. This report considers retrofitting biomass installations into existing buildings types such as schools, care homes, hotels, off gas housing, farm businesses, plant nurseries, dairies, large estates, leisure centres and public offices. Hospitals and social housing were not considered in this study but in certain cases would benefit from woodfuel heating.

It was decided that 2026 would be a suitable future date to aim towards as this is the end point of the current local development plan for which Dorset local authorities are required to create policies for. By 2026, across Dorset, Bournemouth and Poole there are likely to be an additional

64,700 new houses. Many of these will be suitable for biomass installations especially those built as part of urban extensions which will have potential as community heating schemes.

In most cases we have assumed a low future uptake (5-10%) of biomass boilers to allow for the inherent lack of space to house the boiler and fuel storage area and access for fuel deliveries. However, we envisage a greater uptake amongst schools (30%) as these buildings comprise a large proportion of the energy consumed by local authorities and as such will be at the forefront of activities aiming to reduce energy use and carbon emissions.

We have considered two future scenarios for new housing: a low uptake (12% of all new housing) and a high uptake (32% of all new housing including 50% from 2016). The former is based on other renewables (such as refuse derived fuel, anaerobic digestion, heat pumps and solar heating) playing a more significant part in heating new housing whilst the latter would see biomass heating being involved in as many as 65 community heating schemes consisting of more than 100 houses.

Based on the high uptake scenario we would expect the market for woodfuel to be 95,000 tonnes (at 30% MC) by 2026. This would result in the installation of almost 780 boilers in addition to the 65 larger scale centralised systems.

Beyond 2026 it would be necessary to use woodfuel obtained from other sources such as energy crops. Many of the options available have long lead in times. Growing native species as short rotation forestry or broadleaved coppice require planting 10-20 years prior to the first commercial harvest so it is important to begin planning now for Dorset's future woodfuel requirements. This report considers the potential impact of a local combined heat and power plant. These require much more feedstock than heat only boilers and if a plant is constructed it will potentially remove a great deal of the woodfuel available from other projects.

The report makes 23 recommendations on the following broad themes: creation of a woodfuel producer group; further liaison with potential woodfuel suppliers; extending the knowledge base on potential resource and demand; promotion and planting of energy crops, developing positive planning policies for woodfuel heating; biomass boilers in buildings; and training and information dissemination.

This report will be scrutinised by the Dorset Woodlink Steering Group and the Dorset Energy Group and once fully endorsed these recommendations will be taken forward by the Woodlink Officer and Bioenergy Working Group.