

FORESTENERGY

Harvesting and processing forest biomass for energy production in Ireland

PROJECT TEAM

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COMPLETION DATE

December 2008

OBJECTIVES

To secure marketable wood fuel of acceptable moisture content for sale as wood chip and firewood, and specifically to:

- demonstrate harvesting systems for wood for energy with particular emphasis on the western region of Ireland;
- establish the productivity, fuel quality and delivered energy cost of these systems;
- investigate storage options and seasoning potential under various conditions over one and two summer seasons;
- track moisture content variation over the year in growing trees for a range of species;
- host public demonstrations of machinery and methods.

PROGRESS

Five softwood sites and two hardwood sites were harvested. Complete chipping was carried out at one site (Bweeng, Co Cork), partial chipping at three sites (Abbeyfeale, Co Limerick; Ballybofey, Co Donegal; Woodberry, Co Galway), and chipping of chemically thinned plots prepared in 2006 at Kilbrin, Co Cork, and Swan, Co Laois. Site, system and assortment measurements were taken on all sites. Physical and chemical parameters were analysed to CEN Solid Biofuel

Technical Specifications.

A wood drying trial was established using specially designed and constructed bins at Rochfortsbridge. Smaller drying trials were also established at each of the softwood sites. Climatic and moisture content data were collected at all sites and development of a drying model began. Seasonal variation in standing tree moisture content of broadleaf and conifer species was investigated across seven sites.

Six public demonstrations were arranged in collaboration with Teagasc during the harvesting programme as well as three demonstrations during the chipping operation. A demonstration of wood chip production for cattle out-wintering pads was held, also in collaboration with Teagasc.

ACTIVITIES PLANNED

- Harvest final hardwood site (Tipperary).
- Further studies on firewood systems.
- Further studies on moisture content of standing trees.
- Complete the chipping of harvested wood at all sites.
- Complete system studies and fuel analysis.
- Assess storage options and effects on drying.
- Develop drying model to arrive at climatic indicators for predicting drying rate.

OUTPUTS

DVD: *Harvesting and Processing Forest Biomass for Energy Production in Ireland - The Forest Energy Programme*. Solutions for extracting wood for energy from first thinnings of conifer and broadleaf plantations in Ireland.

Kofman, P.D. and Kent, T. 2007. *Harvesting and Processing Forest Biomass for Energy Production in Ireland*. The ForestEnergy 2006 programme. COFORD, Dublin.

Seminar: *Quality-based forest fuel supply chains – the ForestEnergy 2007 programme*. 12 December 2007, with an excursion to the storage trial site at Rochfortsbridge.